

# Minnesota Medicine

Journal of the Minnesota State Medical Association

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## ORIGINAL ARTICLES

### OBSERVATIONS REGARDING THE DIAGNOSIS AND TREATMENT OF BRAIN INJURIES, WITH OR WITHOUT A FRACTURE OF THE SKULL.

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The mortality resulting from brain injuries is very high. During the period from 1900 to 1910, the mortality figures at three of the large hospitals in New York ranged from 48 to 68 per cent. of all cases of brain injuries. In a report\* published in 1916 of the Cook County Hospital of Chicago regarding 1,000 consecutive patients having fractures of the skull, the mortality was 53 per cent. This death rate is indeed appalling, and it undoubtedly accounts for the attitude of many doctors and most hospitals toward patients having fractures of the skull, particularly those of the base. If the patient recovers, remarkable—he had a fracture of the skull. If he dies—well, he had a fracture of the skull.

It is this attitude of comparative hopelessness in the treatment of brain injuries that has allowed these cases to be almost neglected in the general hospital. I well remember being severely reprimanded as a house officer for having admitted to the hospital from the ambulance a fracture of the base of the skull, and not having sent the patient to Bellevue Hospital. As a house surgeon, my instructions

were to keep the beds free of fractures of the base of the skull, the reason being that so little apparently could be done for these conditions; the patients either improved after a long convalescence, or more frequently they died, the treatment other than the ordinary routine palliative procedures being of little or no benefit.

The diagnosis and treatment of brain injuries have advanced most rapidly within the last few years. The clinical symptoms and signs are so varied and frequently so confusing in these patients that it is a most fascinating field. Apparently, in many cases, the more extensive the skull fracture, the less seriously is the brain injured, and on the contrary, the most dangerous of brain injuries are frequently not even associated with a fracture of the skull. As is well known, the fracture in these cases (if we exclude depressed fractures of the vault which should always be elevated or removed) is possibly the most unimportant part to be considered in the treatment, whereas the presence of a marked increase of the intracranial pressure with or without a fracture of the skull should immediately cause the patient to be withdrawn from that large group of patients properly treated by the expectant palliative method, and the advisability of an early operative procedure to relieve the increased intracranial pressure should be considered.

In the treatment of brain injuries with or without fractures of the skull, if the patient is allowed to develop definite paralysis, a lowered pulse-rate, Cheyne-Stokes respiration, and that appalling group of extreme intracranial pressure signs, then I agree entirely with the opinion so commonly now held that these patients "get along" just as well without operation as with operation at this stage—the mortality be-

\*Besley, F. A.: A Contribution to the subject of Skull Fractures, The Journal A. M. A., Jan. 29, 1916, p. 345.

ing 50 per cent. and over; but patients with brain injuries should not be allowed to reach this stage of medullary compression due to the high intracranial pressure—it should be anticipated by the accurate diagnostic methods now known, and if a marked increase of intracranial pressure is ascertained, then an early relief of it should be advised, not only to save the life of the patient, but to lessen the post-traumatic conditions of changed personality either of the excitable or the depressed type, persistent headaches, early fatigue, occasionally epilepsy and that long train of post-traumatic conditions in brain injuries due in the majority of cases to a prolonged increase of this intracranial pressure.

During the past four years, 1913-1917, I examined and treated personally 487 adult patients having acute brain injuries with or without a fracture of the skull; in only 155 of these 487 patients (that is, 31.8 per cent.) were there marked signs of an increased intracranial pressure, and therefore only these patients were operated upon to relieve this increased pres-



Figure 1 (a).

Lateral view showing extensive radiating fractures of the frontal vault in a boy eight years of age who was brought to the Polyclinic Hospital following an automobile accident. Total loss of consciousness for six hours. No signs of high intracranial pressure—therefore, no operation. Excellent recovery. Although the cerebro-spinal fluid was blood-tinged at lumbar puncture on the day following the accident, after the initial shock had disappeared, yet the slight increase of intracranial pressure resulting from this bleeding was not sufficient to render cranial decompression and drainage necessary.

sure, whereas the remaining 332 patients did not show definite signs of an increased intracranial pressure and were therefore treated by the expectant palliative methods of absolute quiet, ice helmet, and catharsis; if in shock, then the routine treatment of shock. It is thus seen that less than one-third of the patients having injuries with or without a fracture of the skull were operated upon, and approximately this same ratio has continued during the past year. It is this careful selection of patients not only in regard to the advisability of an operation or not, and if indicated, then the type of cranial operation used, but of the greatest importance—the ideal time for performing the operation—these factors have made it possible to lower the mortality of fractures of the skull from an average of 50 per cent. of most hospitals to 28.4 per cent. at the Polyclinic Hospital, and if we exclude the non-operated moribund patients dying within three hours after admission to the hospital from shock, internal injuries, and in many cases the fracture of the skull being but an incident in the patient's general condition, the mortality is lowered to only 17.9 per cent.

We now come to the most important and the difficult question in the treatment of brain injuries with or without a fracture of the skull: "If an operation is advisable, when should it be performed?" This question can more easily be answered by stating the two periods when the operation should **not** be performed. Naturally, we must exclude the majority (about two-thirds) of fractures of the skull that do not have a definite increase of the intracranial pressure and therefore no operation is indicated. (The depressed fractures of the vault naturally should always be elevated or removed).

The two periods in which an operation is distinctly contraindicated in cases of brain injury, are, first, the condition of severe shock in the very beginning, and secondly, the condition of medullary edema and collapse—the death knell of the patient. To advise a cranial operation—no matter how badly the skull is fractured, nor how extensive the intracranial hemorrhage seems—with a patient in a condition of severe shock with a pulse-rate of 120 and higher, takes away whatever chance the pa-



tient may have of surviving the shock: the operation is but an added shock and merely hastens the exitus. No patient having a brain injury should be operated upon in this condition of shock; the mortality is most high, and if a patient does recover from an operation in this period of extreme shock, then he recovers in spite of the operation. Cranial operations for brain injuries in this stage of shock were frequently performed in the past and most disastrously, and thus operations were almost discredited in the treatment of brain injuries. The natural reaction following these early operations in the period of severe shock was to wait until there could be no possible doubt that the patient was going to die, unless, as was thought, a cranial operation was performed; that is, the patient was allowed to reach the period of extreme medullary compression—a pulse rate of 50 and below, irregular Cheyne-Stokes respiration and pulse, and profound unconsciousness—before a cranial operation might be considered. This is a most dangerous stage for these patients to reach, and it is doubtful whether recovery can occur even with an operation at this late period, the mortality being very high. But if the patient has struggled through this period of medullary compression, and finally reaches the stage of medullary edema, when the pulse-rate begins to ascend quickly to 120 and higher, respirations become rapid and shallow, that is, the stage of medullary collapse, then we have the second period when no patient should be operated upon—they all die, operation or no operation. I feel if these two extremes can be avoided (and the latter of these, medullary collapse, can certainly be anticipated in the operative treatment of brain injuries, and their signs cannot be overlooked) that the rational treatment of brain injuries from an operative standpoint depends upon the presence or not of a definite increase of the intracranial pressure, whether there is a fracture of the skull or not; in some of the most serious cases no fracture was present—either to be ascertained at operation in the operated cases, or at autopsy. The aid of the Roentgen rays is important in the treatment of those traumatic cases only in patients with doubtful depressed fractures of the vault, and in latent fractures of the skull, where the bump is so

apparently trivial that the patient might not be so carefully examined and treated as the condition would warrant. On the contrary, no patient with high intracranial pressure should be obliged to wait "over night" or for a period of hours merely to secure a Roentgenogram of the skull; it is of no importance in the treatment of these acute intracranial lesions whether a fracture is present or not; if there is a high intracranial pressure as shown by the ophthalmoscopic examination and by the measurement of the pressure of the cerebrospinal fluid at lumbar puncture by the spinal mercurial manometer, then a cranial operation is indicated to relieve this increased intracranial cavity and by the drainage of possible hemorrhage and cerebrospinal fluid; it is not so much a question of removing the hemorrhage as it is of lessening the increased intracranial pressure—whether that pressure is due to hemorrhage or edema—the operative indication is the same; many cases of head injuries at autopsy have revealed no hemorrhage at all, merely a "wet" edematous swollen brain, but sufficient to cause medullary compression and the death of the patient.



Figure 1 (b).

Front view of same patient as Fig. 1 (a), showing the extensive linear fractures in the frontal area. There being no depression of the vault fragments and no marked increase of the intracranial pressure, naturally no operation was advised. There was bleeding neither from the ears or nose, so that it is presumed that the fractures at the vault did not radiate down to the base, as they usually do.

If an operation is considered advisable to relieve the increased intracranial pressure, then the operation of choice is the subtemporal decompression and drainage;\* if there are no definite localizing signs of the intracranial lesion, then the decompression should always be performed on the right side in right-handed patients in order to lessen thereby any possible operative damage to the motor speech area of the left cerebral cortex; in these cases it is not so important to remove the hemorrhage as it is to offset its pressure effects. In cases of depressed fractures of the vault showing definite signs of a high intracranial pressure, it is better surgical judgment to precede the elevation of the depressed area of bone by a subtemporal decompression so that when the depressed bone is removed there will be little or no danger of the underlying cerebral cortex being damaged by its protrusion upward through the bony opening; as the subtemporal decompression exposes a comparatively silent area of the brain—a portion of the temporo-sphenoidal lobe—its protrusion and possible damage would not appear clinically, whereas a partial paralysis, impairment of sensation or of vision, might occur, and frequently does result from operations performed over the more highly developed areas of the cerebral cortex. Besides, the subtemporal route provides not only an excellent exposure of the middle meningeal artery and that portion of the brain so frequently involved in fractures of the skull, but it affords drainage to the middle fossa of the skull—the chief intracranial cistern—at its lowest point at the base of the skull; again, the thinness of the squamous portion of the temporal bone makes the operation a less difficult one technically. The vertical incision (and not the obsolete curved incision) should be used not only to render the operative hemostasis more effective, in that the trunk of the temporal artery is clamped at its lowest point at the very beginning of the operation, and thus there is no bleeding from its branches, but this incision also permits the removal of the underlying squamous bone as far as is possible beneath the temporal muscle, and yet the attachment of the temporal muscle to the parietal crest is left intact so that a firm closure of its separated muscle fibres is assured;

this is a most important point in cases of high intracranial pressure as in brain tumor, where a cerebral hernia or fungus might result from an imperfect closure of the temporal muscle. The insertion of celluloid plates and other foreign bodies beneath the scalp is to be most strongly condemned.

If the intracranial pressure is so high that the cerebral cortex tends to protrude through the bony opening, it is frequently wiser in selected cases to perform a similar operation upon the opposite side of the head immediately after the first operation. I have been obliged to do this in only five per cent. of the patients. They are the ones having a swollen edematous brain, "water-logged," as it were, where the drainage of blood and cerebrospinal fluid is slight and not sufficient to cause a marked decrease of the intracranial pressure. In some doubtful cases it is better judgment to wait for one or two days and even longer before the second operation is considered advisable. The rubber tissue drains are usually removed on the first or second day post-operative, and the hospital convalescence ordinarily requires at least two weeks. Naturally, these patients should not enter into their former active life for a period of three months and even longer; a too early return to the strain and stress of modern life predisposes them to many complaints, both subjective and objective; repeated examinations of the fundus of the eye and of the superficial and deep reflexes are here most important in estimating the physical normality of the patient.

Gun-shot injuries as well as stab wounds of the brain are usually associated with a penetrating fracture of the skull, and may therefore be considered in the same class as cerebral injuries following fracture of the skull; the greater danger of infection is present, however, and especially is this true when the missile has passed through the naso-pharynx. Unless these patients are treated early, they rarely recover; particularly is this so when the skull and brain have been perforated, there being both a wound of entrance and of exit. These patients should all be treated as brain injuries having an increased intracranial pressure of sufficient degree to warrant the operation of cranial decompression. I have yet to see a gun-shot injury of

\*Amer. Jour. Med. Sci., April, 1915, No. 4.

the brain which did not cause a marked increase of the intracranial pressure due to the resulting cerebral hemorrhage and edema, so that not only is the operation of decompression and drainage advisable to lessen this pressure, but also as a means of lessening the danger and even preventing a meningo-encephalitis so frequent in the patients who survive the initial period of shock and active hemorrhage. Naturally, if the missile has passed through the basal ganglia, ventricles, the subtentorial tissues and large intracerebral vessels, then the shock with or without a large hemorrhage is so rapid that these patients rarely survive a period of time sufficient to warrant any operative procedures. Besides, if in severe shock, naturally no operation should be attempted, just as in brain injuries following head trauma. If the patient with a pulse-rate over 120 cannot react sufficiently to overcome this condition of shock, surely no operation will assist him. If the patient does survive the shock, then a decompression should be performed; and, if necessary, a bilateral decompression, and both the skull openings of entrance and exit should be enlarged with rongeurs, "cleaned" as well as possible, and rubber tissue drains inserted. By no means should the brain be probed or "ex-

plored" for bone or bullet fragments, as more damage, such as an increase of the cerebral hemorrhage and edema, as well as a direct destruction of the delicate nerve tissues, usually results from such procedures. There is little danger from subcortical foreign bodies other than that of infection, and the mere removal of the foreign body would not lessen that danger as it would have occurred at the time of the injury. Such meddling procedures, especially when the patient is in the initial shock, merely hasten the death of the patient. Just as in brain injuries following head trauma, if the patient is in severe shock, treat him for shock, and "let him alone,"—not even careful neurological examinations to ascertain the exact cerebral status; such examinations of a patient in severe shock merely do not benefit the patient but undoubtedly they lessen his chances of surviving the shock; if however, the patient can overcome this condition of shock, then he should be most carefully examined and the proper treatment of the local injury instituted as soon as possible.

The symptoms and signs of brain injuries in babies and children are very different from those following similar injuries in adults. In babies, owing to the open fontanelles and to the greater elasticity of the dura, the symptoms and signs of brain injuries are often so mild that they are frequently overlooked. Unless most careful and thorough neurological examinations are made and certain special aids to diagnosis are utilized, such as the ophthalmoscope and the examination of the pressure of the cerebrospinal fluid by the spinal mercurial manometer, then these intracranial lesions may escape serious attention for a period of months in newborn babies, and even years in many children. The remote effects, such as spasticity, mental impairment in many cases, and frequently epilepsy, are merely reminders of the former intracranial damage, so often a supracortical hemorrhage, and we should be most careful in our examinations and treatment to anticipate these frightful sequelae.\* The older the child following a cerebral birth trauma, and the longer the period of time since the injury in the older children, the less hopeful is the prognosis. These late cases are derelicts, as it were,

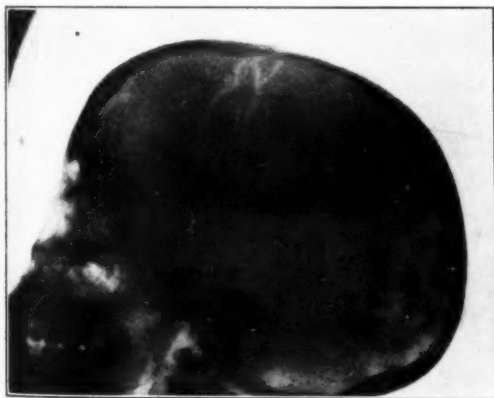


Figure 2.

Showing "bursting" type of fracture of both sides of the vault extending down to the middle fossa of the base, in a girl eleven years of age, following a fall from a one-story window. Oozing of much blood and cerebro-spinal fluid from both ears, and as the intracranial pressure did not become markedly increased, the patient in this manner probably "decompressed" herself so that no operation was necessary. Excellent recovery.

\*International Clinics, Vol. III, Series 27, 1917.

and can merely be improved, whereas if the condition of cerebral hemorrhage and edema is recognized as early as possible after the intracranial lesion has occurred, and if there is a marked increase of the intracranial pressure, and the proper operative treatment of cranial decompression and drainage instituted, then in these cases so treated not only will the ultimate improvement be greater and even a cure obtained, but the immediate recovery of life will be greatly aided. These lesions in babies and children have been so overlooked and even neglected, that it has seemed advisable to report a large number of these cases in detail.\* Naturally, the older the child, the more do the symptoms and signs of an intracranial lesion approximate those occurring in an adult, and yet the brain in children under the age of puberty is so adaptable to changed conditions, and to a certain extent less delicate, that even a high degree of intracranial pressure due to cerebral hemorrhage and edema may present clinically few signs of its presence, and in many cases it can be withstood and undoubtedly is successfully overcome by natural absorption alone. This fact should always be remembered in the treatment of brain injuries in children, so that no operation should be advised, unless the intracranial pressure in these cases is very high and when it is doubtful if the child can "take care of" this increased pressure alone; thus does the treatment of brain injuries in children differ from that in adults. Naturally, just as in adults, all traumatic depressions of the vault with or without a definite fracture of the bone itself should be elevated or removed; in babies, the use of forceps in difficult labors frequently produces a definite depression of the vault without a fracture of the bone itself owing to its greater resiliency, and unless this depressed area of bone is elevated or removed, the danger of future cerebral impairment is great indeed. It is frequently not necessary to open the dura in these cases of local depression of the vault in babies, as subdural supracortical hemorrhage is apparently of rare occurrence. Naturally, in cases of doubtful subdural hemorrhage and cerebral edema, the dura should always be opened through a subtemporal decompression, just as in adults hav-

ing an increased intracranial pressure associated with a depressed fracture of the vault the local bony depression is elevated or removed.

The end results of patients having brain injuries with or without a fracture of the skull have been an interesting study. It has become quite a common belief that once a man has had a fracture of the skull and then recovers, he is never the same person again. In 1912, I examined the records of three of the large hospitals of New York City during the decade of 1900-1910; the mortality of fractures of the skull was 46 to 68 per cent; the mortality of the patients operated upon was 87 per cent; this high percentage due undoubtedly to the operation being postponed until the extreme stages of medullary compression and edema, and also to the fact that the operation performed was the "turning down" of a bone flap (a much more formidable procedure than a decompression) and then the bone replaced so that even the benefits of a decompression were thus prevented; besides, in many cases the dura was not opened, and as the dura is inelastic in



Figure 3.

Huge multiple fractures of the vault, allowing the vertex of the skull to become elevated as the result of the "bursting" type of indirect fracture, in a boy sixteen years of age, following a severe fall upon an asphalt pavement. A very extensive haematoma appeared within an hour beneath the entire scalp of the vault; in this manner, the signs of an increased intracranial pressure did not occur owing to this escape of blood from the intracranial cavity out under the scalp, and therefore the cranial operation of decompression and drainage was avoided. Excellent recovery.

\*New York State Journal of Medicine, Oct., 1916.



adults, no adequate relief of the pressure could possibly be obtained. Of the patients, however, who were finally discharged as "well" or "cured," I was able to trace only 34 per cent, but of these 34 per cent of the total patients found, 67 per cent of them were still suffering from the effects of the injury—that is, two-thirds of them were not as well as before the injury; the chief complaints were persistent headache, a change of personality of the depressed or of the excitable type and thus emotionally unstable, early fatigue making any prolonged mental or physical effort impossible and thus the inability to work, lapses of memory, spells of dizziness and faintness, and even epileptiform seizures in a small percentage of them. In examining the hospital records of the patients having these post-traumatic conditions, it was most interesting to ascertain that these were the patients (and there were but few exceptions who regained consciousness gradually after several days and remained in the hospital for a period of four weeks and longer), whose charts made frequent mention of the severe headache and a low pulse-rate of 60, and in some cases below 60—that is, the usual clinical signs of an increased intracranial pressure; an ophthalmoscopic examination had rarely been made. Many of these patients still showed the results of the increased intracranial pressure in their fundi and at lumbar puncture, and these were the ones upon whom a cranial decompression even at this late date of several years caused a marked improvement; the operative findings were always associated with a "wet," swollen edematous brain. Many of the so-called post-traumatic neuroses are, in my opinion, frequently superimposed upon this definite organic basis as the result of the brain injury. The treatment, therefore, of brain injuries should not be limited merely to the recovery of the patient as far as life is concerned, but it should also be directed toward obtaining a normal individual—approximating as closely as possible the condition of the patient before the injury.

## DIAGNOSIS AND TREATMENT OF TUBERCULOUS ARTHRITIS OF THE HIP-JOINT.\*

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Shortening and ankylosis in deformity, after prolonged suffering and disability, are the results of nature's cure of tuberculous disease of the hip. Abscess formation with annoying multiple sinuses frequently complicates the condition and adds to the misery of the patient. To avoid these end-results, early diagnosis and careful, prolonged treatment must be carried out under competent supervision.

While tuberculous disease of the hip is usually found in the first decade, Whitman's<sup>1</sup> report of 88.1 per cent of patients under 10, and 45.6 per cent between 3 and 5 years of age, and a review of cases observed at the Mayo Clinic leads us to conclude that our practice consists principally of long-standing severe or neglected cases. In one hundred consecutive cases there were 23 patients in the first decade, 23 in the second, 24 in the third, 22 in the fourth, 4 in the fifth, and 4 in the sixth. The average duration of the disease before our examination was 20 months, the shortest 2 weeks, and the most prolonged, 46 years. The histories clearly show that early diagnosis and proper treatment was instituted, only to be discarded at the termination of acute symptoms, to be followed by recurrence, the formation of abscess, ankylosis, etc. Fifty-six per cent of these patients were males and 44 per cent females. The right hip was affected in 60 per cent.

A diagnosis should not be made by roentgenograph alone nor should it depend entirely on laboratory findings but rather on a carefully written history, a clinical examination substantiated by the roentgenograph, and the laboratory findings. The fact that Perthe's osteochondritis deformans juvenilis has been but recently differentiated from tuberculous arthritis makes this summarization of findings in diagnosis obvious. The history is of great impor-

\*Presented before the Southern Minnesota Medical Association, Mankato, Nov. 26-27, 1917.

<sup>1</sup>Whitman, R.: A treatise on orthopedic surgery. Phila., Lea, 1901, 650 pp.



tance, bringing out the insidious onset, the exposure to trauma and infection, etc.

Forty-four per cent of our patients gave a history of trauma directly preceding the primary complaint and referred to it voluntarily as the cause of the arthritis. Trauma was the most frequent cause of recurrence of symptoms, those second in importance being illness or pregnancy. Exposure to tuberculosis in the home was noted in 17 per cent.

Among the earliest symptoms are muscle-spasm, limping, pain and atrophy, the patient frequently resting the well foot on the affected one, pushing down in the effort of traction and fixation. Pain is often referred to the knee-joint. Night starts and cries may or may not be present and are not in themselves diagnostic, but associated with other symptoms, aid in the conclusions. Later deformity, shortening, peri-articular thickening, and cold abscess formation may become evident.

Roentgenographic findings are dependent on the stage of the disease, varying from synovitis, and thickened or distended capsule, to areas of rarefaction and general haziness or destruction of the entire joint and acetabulum, with upward displacement of the greater trochanter. Even perforation of the acetabulum and sequestrum in the urinary bladder may occur. In our series there were two cases of perforation of the bladder. One patient was operated on, the sequestrum proving to be the femoral head.

Von Pirquet's test is of the greatest value as an aid to early diagnosis in children under 5 years of age. Its value decreases with increasing age. Aspiration and guinea pig inoculation proving the presence of tuberculous bacilli is final evidence. Our observations would lead us to believe that there is, independent of Perthe's disease, a mild and fulminating type of tuberculous arthritis. The blood count is of value as showing increase in lymphocytes and secondary anemia. In forty-eight patients the hemoglobin averaged 67 per cent. The temperature, night sweats, other tuberculous lesions, etc., give further evidence of the disease.

#### Differential Diagnosis.

1. Traumatic arthritis or periarticular injury is differentiated by local tenderness, ecchymosis, the history, and a negative roentgenograph, while impaction fractures, later

causing a limp, and shortening due to loosening up of the impaction, give positive roentgenographs.

2. Chronic hypertrophic arthritis has frequently been confused with the tuberculous type. The condition appears in older persons, and shows characteristic lipping arthritis without rarefaction, etc. The limitation of motion is usually in abduction and rotation due to mechanical obstruction and there is little or no muscle-spasm, shortening, etc.

3. Infectious arthritis is usually multiple, acute and accompanied by high fever, and leukocytosis. A search for focal infection and its removal lead to rapid recovery. Aspiration and bacteriologic examination aid in differentiation. The observation of the patient may be necessary for some time.

4. Perthe's disease, osteochondritis deformans juvenilis, may resemble tuberculosis clinically but may be differentiated by the characteristic epiphysial changes.

5. Infantile paralysis is easily differentiated in the paralytic stage. In the acute stage there may be local pain and tenderness for a short time which soon leaves a typical paralysis.

6. Arthritis of the knee allows motion of the hip without pain when the knee is held immobilized, and the entire limb carefully manipulated. An examination of the hip should always be made when pain in the knee is complained of without local objective findings.

7. Pott's disease of the lumbar spine has as its earliest symptom muscle-rigidity. Careful manipulation of the hip with negative roentgenographs will make clear that the hip itself is not involved.

8. Congenital dislocation lacks muscle spasm, rigidity, atrophy, etc., and is positively diagnosed by the gait, palpation, and the roentgenograph.

#### Treatment.

The general hygienic antituberculous care of the patient is of the utmost importance. Rollier's<sup>2</sup> methods are productive of excellent results. Sunshine, fresh air and simple substantial food are the most useful general aids and preferable to dosing the patient with medicine,

<sup>2</sup>Rollier: The practice of sun-cure for surgical cases of tuberculosis and its clinical results. *Tr. Internat. Cong. Med.*, 1913, Lond., 1914, Sub-sect. vii, (a), *Orthoped.*, pt. 2, 251-269.

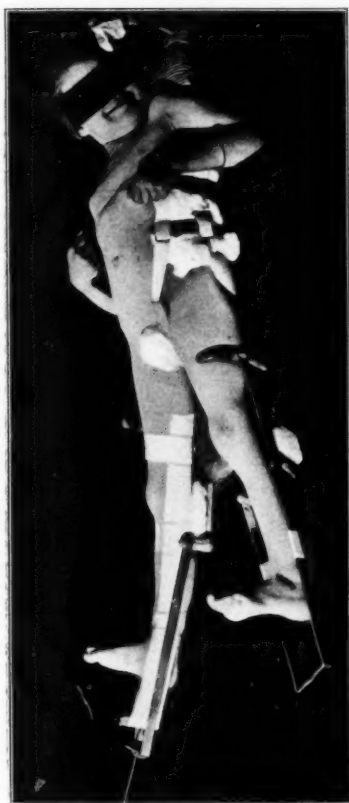


Fig I

1. Child on Jones' abduction frame showing extension and perineal strap.

although tonics and constructives have a value. The use of a sun porch is urged, and patients are instructed to live thereon. They should sleep with windows open, and be properly protected against wind and cold.

The local treatment is dependent on the stage of the disease and the circumstances. We prefer the Jones abduction frame and have used it with much satisfaction during the acute stage (Fig. 1). It allows the fixation and extension; it relieves pain and spasm, while at the same time correcting the deformity. The bed-pan may be used without moving the patient. When necessary, by grasping the bar between the legs and the head piece, the patient and the frame may be transported without discomfort. Pressure sores seldom develop, and then only from neglect. The body may be inspected and

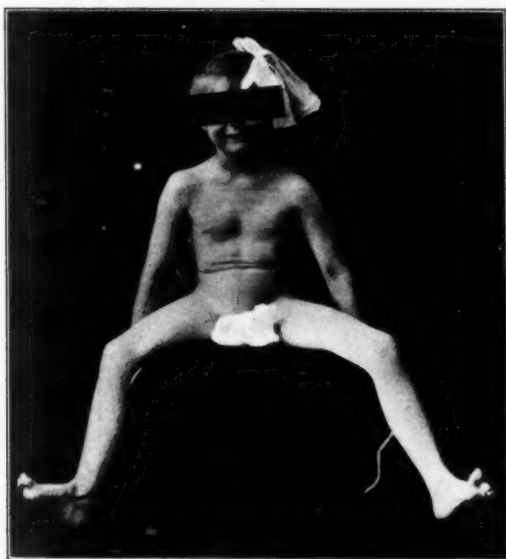


Fig. II

2. Child sitting up first time after treatment on Jones' abduction frame.

if dressings are required, easy access is permitted. The length of time the patients remain on this frame is of little consequence, just so they remain long enough. It is far better to keep them there until all acute symptoms have subsided, the general condition has improved, the deformity has been corrected, and roentgenographic examination shows redeposit of salts. Many of our patients remain on this frame a year or more when the severity of the disease, sinus or abscess formation make it necessary (Fig. 2).

In adults the acute stage may be treated by Buck's extension in bed, the limb being supported by sandbags.

During the subacute stage, if no drainage exists, a cast of the Lorenz type may be used, together with crutches and the elevation of the sound limb by means of a patten (Fig. 3).

The length of time required during this stage of treatment must be determined in each individual case. When weight-bearing is attempted under supervision and no pain ensues, the patient is warned as to the danger of trauma, provided with a Thomas hip splint and advised to continue crutches, gradually applying more



Fig. III

3. Lorenz cast which is used after Jones' frame. The sound leg is given an extension boot and crutches are used.

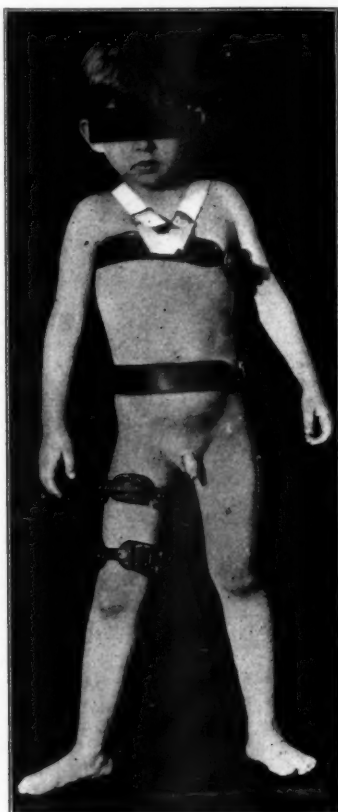


Fig. IV

4. Modified Thomas splint used with crutches after acute stage.

weight to the affected limb for a period of three or four months. Any remission of symptoms should be treated by recumbency and extension (Fig. 4).

At the time of examination 90 per cent of the patients in our series showed deformity, the flexion adduction type being practically always present. Nineteen per cent were ankylosed and the average shortening was  $2\frac{1}{4}$  inches. In 60 per cent the deformity was in the right hip. Ten per cent required aspiration, and 14 per cent curettage or sequestrotomy. The patients with deformities, and those in the subacute stages, were treated by brisement force with ether anesthesia and plaster casts, followed by crutches, etc. Osteotomy of Gant's type was performed in cases in which the deformity had become ankylosed.

#### DISCUSSION.

DR. CHARLES REED, Minneapolis: We all know how difficult it is to read a paper that will be of equal interest to the general practitioner and the specialists, but I think Dr. Meyerding's paper has been very interesting to you, and I am sure it has been to me. He has covered the whole subject in a clear concise manner, and it is quite remarkable.

I wish to speak of just a couple of things. The differentiation from Perthe's disease is easy from the radiogram, yet for many years Perthe's has been overlooked. I think the trouble is that in the beginning stages the X-ray shows very, very little in either tuberculosis of the hip or Perthe's disease, and it has had a great effect upon our statistics, because Perthe's disease has been very often healed in a remarkably short time, and some particular form of treatment has been given credit for the cure; and for that reason the statistics are not correct.

Dr. Meyerding has made a differentiation between many conditions that might be mistaken for tuberculosis of the hip, but there is one condition that I

think should be put in, and that is epiphiseal separation. It is also easily shown with the X-ray, but it comes with the same history of a minor injury, pain, reconstruction, and after some months acquiring the shortening. The general practitioner may not take careful enough radiographs and it may be overlooked.

As to the treatment, there are two schools. The German School, the Lorenz School, which says that the only satisfactory cure of hip disease is an ankylosis, and therefore the quicker the ankylosis the better. Lorenz treats all of his cases with the spica cast, the long spica from the shoulder to the toes in severe cases, and the short spica in milder cases. The American men come with the idea of abduction on traction, with the splint method, the brace method with traction. A few years ago I think the tendency in America was for the pendulum to swing to the German School. I know I did, and Albee in New York did the same thing. While it was very satisfactory in many ways, we certainly did not get the movement that we should have. I think it is pretty thoroughly proven that we can get a cure and still have a reasonable amount of motion left.

DR. A. E. WILCOX, Minneapolis: I just want to ask a question relative to the history of trauma in these cases. I understand that 44 per cent of the cases gave a history of trauma. I want to know if Dr. Meyerding has any information that would give him a definite idea of the length of time following the trauma obtained in the history, after which the suggestive symptoms of tuberculosis developed. I see many cases of trauma and see very few cases of tuberculosis of the hip. The question is, the time relative to the trauma and the development of suggestive symptoms of tuberculosis.

DR. MEYERDING (in closing): In our series of cases with trauma there has been a rather long period before the onset of tuberculosis. We did not find tuberculosis of the hip coming on immediately after the injury. It would seem that probably the bacteria present in the system at the time of the accident or soon after, gained access to the damaged parts, setting up local tuberculosis either at that time or at some later time, when the patient's condition was below par.

## SOME RARE PATHOLOGICAL CONDITIONS OF THE APPENDIX; WITH REPORT OF CASES.\*

GEORGE A. GEIST, M. D.,  
St. Paul, Minn.

As the result of chronic inflammation the appendix wall and sometimes the adjacent structures, may become enormously thickened. Such a condition is a pathological entity, known as appendicitis fibro-plastica. The etiology is a chronic irritation, either bacterial or mechanical (the presence of a concretion or foreign body), and usually is a combination of both. Actinomycosis and tuberculosis are not to be regarded as causes since this condition under discussion is a non-specific inflammatory one. This type of appendicitis is characterized by the typical pathological reaction to chronic inflammation, that is, there is a marked increase in the connective tissue with a resulting tumor formation. Since the tumor is inflammatory in origin, it is benign; in most cases, however, it produces either a partial or complete intestinal obstruction.

Läwen describes the inflammatory tumors in the ileocecal region and divides them into three classes:

I. Inflammatory tumors of the cecum and ascending colon, which do not arise from the appendix. Such a case was reported before the Minnesota Pathological Society four years ago by Dr. A. A. Law.

II. Inflammatory tumors which arise from the appendix affecting it but little and spreading through it into (a) the anterior or posterior abdominal walls and (b) the neighboring intestines and mesentery. I wish to report a case which corresponds to this type of inflammatory tumor:

Mr. N. H.; foreman; age, 56, gave the following history:

For many years the patient had occasional pains in the region of the appendix which came on more especially when he was constipated. Blood was never observed in the stool. His weight had remained constant. The bowels re-

### COAL CONSUMERS MUST BUY WINTER SUPPLY NOW

Consumers must buy their Winter supply of Coal during the Spring and Summer for storage if production is to be



maintained at a maximum and the country enabled to avoid a serious Coal shortage this Winter //

H. A. Garfield

U. S. FUEL ADMINISTRATION

\*Read before the St. Paul Clinical Club, January 4, 1918



quired cathartic drugs over a period of years. One week preceding his entry to the hospital he was able to feel a mass in the right iliac region. Dr. Turnacliiff examined him and established the presence of the mass.

**Examination:** In the right iliac fossa a mass the size of a hen's egg was felt; it was not tender and could be moved laterally though was fixed when we attempted to move it upward and downward.

**Operation:** February 7, 1916. In the retrocecal region a mass was found which appeared to be fibrous in character and showed no signs of carcinoma. Blunt dissection was commenced at the base of the appendix; following the base and dissecting through the heavy fibrous tissue, the entire appendix was freed along its muscular coat. We thus excised the mucosa, sub-mucosa and the muscularis of the appendix leaving the fibrous tissue mass. This patient made an uneventful recovery and examination six months later showed that the mass had completely disappeared.

III. Inflammatory tumors arising from the appendix and confined to the appendix, cecum, ascending colon and lower ileum. This type Låwen regards as appendicitis fibro-plastica in the restricted sense.

Låwen's case was in a woman, age 51, who gave a history of chronic constipation. She had more or less lower abdominal pain which would be relieved for several days by free catharsis. Two weeks before admission into the hospital she had sudden severe pain in the right iliac region which occurred after heavy lifting. At the painful spot she noticed a hard lump. At operation a mass twice the size of the fist was found in the region of the cecum. The appendix was greatly thickened, hard, and contained a large enterolith. Ileocolic resection was done. Microscopically the walls of the cecum and appendix were greatly thickened. The serosa and sub-serosa showed increase in the cellular connective tissue with round celled and leucocytic infiltration. The longitudinal muscles were not abnormally thickened, whereas, the circular muscles were separated by a connective tissue which originated in the serosa. The sub-mucosa was enormously thickened. In the mucosa a rapidly growing connective tissue was found.

I wish to report a case belonging to this class:

Mr. A. M.; age 25; farmer; was admitted with symptoms of intestinal obstruction; a large mass could be felt in the right iliac region. He was operated January 9, 1913, by Dr. A. Schwyzer. A large tumor was found in the right iliac region involving the ileum and cecum; of the appendix the base alone could be seen; an incision was made into the mass and no purulent material was found. Ileocolic resection was done. The patient made a complete recovery. The specimen showed a large fibrous mass in the mesentery within which there was a small abscess cavity. Here we had undoubtedly the tip of the appendix which had become necrotic. Pus of low virulence was present and this chronic irritation resulted in the fibrous tumor which caused a kink of the ileum and by pressure, a narrowing of the lumen of the gut.

The following case operated upon in 1900, while it does not conform with either of the types of appendicitis fibro-plastica described above, illustrates the same pathological process.

Patient: age 25; for many years had attacks of slight pain over the appendix. He gave a history of acute pain of two days duration. Vomited and had slight rise in temperature. At operation a large mass was found retrocecal and adherent not only to the cecum, but also to the parietal peritoneum. The mass was the appendix itself; its walls had become enormously thickened and at one point recent omental adhesions were present. On opening the mass we found a large quantity of pus filling the sac and a concretion. Thus in this case we have the enterolith, the chronic infection with resulting great increase in the connective tissue within the appendiceal wall, ulceration and destruction of the wall at one point and commencing symptoms of perforation. Recovery in this case was uneventful and the patient is in good health—seventeen years after the operation. Diagnosis: Empyema of appendix; fibrous thickening of the wall.

#### Carcinoma of the Appendix.

The following case is a very unusual form of carcinoma of the appendix: Patient: Mr. P. M.; age, 55; grocer; complained of chronic constipation which during the past year had grown progressively worse. At no time did he have pain. The past month he noticed blood in the



stool at times; defecation was painless. There was great loss in weight and the abdomen became enormously distended. On examination the abdomen was found to be very tense, making the palpation of a tumor impossible. Per rectum a nodular mass was felt with difficulty. Operation November 18, 1915. The entire abdomen contained about two quarts of gelatinous material which poured out in large and small chunks and was not adherent to the intestine. There was no evidence of inflammatory peritonitis. In the region of the appendix a mass, the size of a grape fruit was found. It was somewhat adherent but on freeing we plainly saw that it was attached to the base of the appendix which could be seen for a length of 1 c. m. The tumor was irregular in shape and its entire surface was covered with necrotic gelatinous material. In the mesentery of the pelvic colon another mass, the size of a peach, was found. This was similar to the primary tumor in consistency. General glandular enlargement was present and the glands were very soft in character. The tumor of the appendix was removed and because of the presence of obstruction which was due to the mass in the pelvic colon, appendicostomy was done. The patient died six months after the operation.

**Description of the Tumor:** Macroscopic: the surface is irregular and covered with gelatinous exudate; on section we find cystic formations containing myxomatous material and areas of hyaline degeneration; fibrous bands can be seen coursing through the growth. There is no remnant of the appendix excepting at the base of the appendix to which the tumor is attached.

Microscopic: Areas of epithelial cells arranged in rows are found with difficulty. Fibrous connective tissue bands are present and along these occasional glandular arrangements of epithelial cells can be found. Myxomatous degeneration is present,

Harte in 1908 collected 92 cases of primary carcinoma of the appendix in a total of 2,322 autopsies for appendicitis; all of the appendices were not examined microscopically. At least 200 authentic cases have been carefully described.

Baldauf states that 1% of all inflamed appendices will be found to be malignant. The

site of the malignancy is in a large percentage of cases in the tip which has been obliterated by inflammatory processes. Many of these cases have been found in the young; four cases under ten, 13 between 10 and 20, 34 between 20 and 30, and 21 between 30 and 40.

Pathologically we have two types: the columnar celled and the basal celled. McWilliams gives the following classification and percentage of occurrence: Columnar, 22%, Spheroidal, 53%, Transitional, 9%, Colloid, 4%. Milner, in 1910, regards these tumors as products of a chronic hyperplastic inflammation, chiefly a hyperplastic lymphangitis and he regards the parenchyma cells as endothelial and not epithelial. Marchand and Dietrich believe the tumors to be epithelial in nature. Because of its benign character in many instances, De Jong compares carcinoma of the appendix with *ulcus rodens* or *epulis*. Aschoff describes growths and swellings the size of a pea, and larger, in the submucosa and extending to the serosa, which appear to be small, solid nests of cells. Tubular arrangements of these cells have been observed. They are, however, not derived from the glandular mucosa. These cell nests (especially in the young) show an absence of active growth. Aschoff regards the growths as "Schleimhautnevi" or mucous membrane naevi, which are comparable to the naevi of the skin. These may or may not become changed into the truly malignant carcinoma. Other authors suggest the term "Carcinoid" for this type of growth. Luce regards true primary carcinoma of the appendix after the "Schleimhautnevi" have been excluded as extremely rare. In 1905 A. O. J. Kelly had collected 40 cases of the Colloid type. I wish to cite a few cases similar to the one present:

1. Weir's case: male; 22; abdominal obstruction with ascites. Appendix was transformed into a mass of mucoid material. A large number of sub-paritoneal metastatic nodules were present.

2. White's case. Discovered at autopsy, in a woman aged 75, in whom death was caused by intestinal obstruction. Appendix was hard and nodular. It had not ruptured. Centrally colloid was present.

3. Kudo's case. A man aged 42 presented a tumor in the right iliac fossa; a mass the size of

a small apple, irregular in shape and its surface having a cauliflower-like appearance was found. The appendix lay within the mass and was not visible. A second tumor, the size of a walnut, at the cecum, was found to be the tip of the appendix, which had ruptured into the secum. On microscopic examination no portion of normal mucosa could be found. The alveolar structure was almost completely myxomatous. The stroma of connective tissue contained in certain areas atrophic muscle fibres and in others distinct hyaline degeneration. In but one area could glandular elements be found. The lumina contained gelatinous material and many goblet cells lined the lumina. Diagnosis: Carcinoma gelatinosum.

4. Neugebauer's case. Man: age 33; abdominal cramps, constipation alternating with diarrhoea, loss in weight. Recent increase in the right iliac, pain and vomiting. No tumor palpable on rectal examination. At operation 1½ liters of fluid was removed. Large mass containing yellowish gelatinous material was present in the region of the appendix. The appendix itself could not be made out. Microscopically, no epithelial cells could be found. The remaining pathology was similar to that of Case 3.

Our case reported above was one of these rare tumors of the appendix which is known as carcinoma gelatinosum.

## ESSENTIALS IN PEDIATRIC DIAGNOSIS.\*

GOLDIE E. ZIMMERMAN, Pd., M. D.,  
Sioux Falls, S. D.

The average doctor in general practice pays little attention to pediatrics. He says it takes too much time; and then, too, the infants and young patients cannot explain their symptoms. So much the better, for it is not from subjective symptoms alone that we are ever to make a diagnosis. In working with children we find that our patients have no imagination. We learn more from the objective symptoms than subjective.

Physical diagnosis relates primarily to the objective study of disease by the four cardinal methods of inspection, palpation, percussion, and auscultation, the successful practice of which depend upon the examiner's senses of sight, feeling, and hearing. There are a great many different methods of examining the patient. Every physician should have some one systematic method which he follows in every case. By so doing it takes less time and nothing is overlooked. Visual examination or inspection of the patient is the first, and in some instances the all important step in a routine physical examination. "We make more mistakes by not looking than by not knowing," is an aphorism of Edward Jenner's well worth remembering.

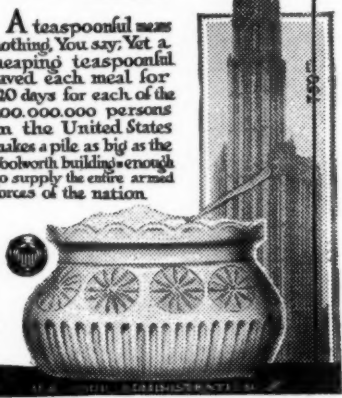
After finding out the patient's age, weight at birth, present weight, I know of no better way in making an examination than by beginning at the top of the head and going down, but leaving the mouth until the last as the patient usually objects most to that part of the examination.

In examining the head we note first the scalp—any eczema or nodes, scabies, bald spots on back of head; then the skull—any evidences of rickets, as, head enlarged, abnormally large fontanel, square box-shaped head.

The ears are very often the source of much trouble and are just as often passed over unobserved. Discharges from the ear or ears may be the seat of much trouble. This leads the examiner to carefully look for the cause, which

### SUGAR MUST BE SAVED!

A teaspoonful means nothing. You say. Yet a heaping teaspoonful saved each meal for 120 days for each of the 100,000,000 persons in the United States makes a pile as big as the Woolworth building—enough to supply the entire armed forces of the nation.



\*Read before the Sioux Valley Medical Association, Sioux City, Iowa, January 22, 1918

is often the tonsils and adenoids. Among all the diseases of children none is probably so frequently overlooked as otitis (Kerley). This is due to the fact that the practitioner invariably looks for pain as a symptom of the disease. It is most interesting to note, however, that in a goodly number there are no signs of pain, as we expect to find it, but the patients are restless and sleep poorly, and evidences of relief follow incision of the drum membrane.

Inspection of the nose: whether a nasal discharge; if any, the character of same. Rhinitis when an early symptom in infants may be an aid to diagnosis of much importance. In order to treat this condition successfully the source of the discharge must be discovered. It may be due to adenoids in the naso-pharyngeal vault; hypertrophy of the turbinated bones, with septal deviations and hypertrophy of mucous membranes; infections due to pyogenic bacteria or the Klebs-Löffler bacillus; malnutrition; diseases of the sinuses; and foreign bodies.

Inspection of the face reveals the expression (adenoid face) and the color. Pallor appears in fat babies over six months of age when incorrectly fed (condensed milk), in atrophic babies, and in cases of prolonged indigestion.

The skin is noticed as to its elasticity (inelastic skin being of bad import), roughness, scaling, prickly heat, furunculosis, and eczema (seen in difficult feeding cases).

Routine examination of the neck and axilla should be made in order to detect glandular swellings symptomatic of such lesions as simple adenitis, tuberculosis and syphilis. The cervical glands are the favorite site of simple acute adenitis, and are met with in specific fevers of childhood and in local infections of neighboring parts. The submaxillary glands are often the earliest site of tuberculous adenitis, which in time implicates the other lymphatics of the neck.

The occipital glands are commonly enlarged in syphilis. They are freely movable masses of cartilaginous hardness and moderate size. Whenever such are found, search should be made for inguinal adenitis, and for supratrochlear kernels just above the internal condyle of humerus.

The posterior cervical glands are peculiarly susceptible to enlargements in rubella, and the occipital glands in irritation of the scalp. Enlargement of the parotid gland, aside from mumps, may be secondary to septicemia, pneumonia, and similar infections. Enlargement of the axillary glands may be secondary to vaccination, infected wounds, and general septicemia. The thyroid gland when enlarged is often due to acute thyroiditis, abscess or tuberculous.

Myxoedema in the form of cretinism is characterized by atrophy of the thyroid.

Next the examination of the chest. Are there any evidences of rickets, such as beading of ribs, pigeon chest, flaring of ribs, Harrison's groove, soft ribs sucking in on inspiration? The funnel-breast, also, sometimes exists, especially when adenoid and tonsillar hypertrophies co-exist. It is characterized by a depression of the lower part of the sternum, extending from the tip of the xiphoid to the middle of the gladiolus. Unilateral bulging of the chest may be due to one-sided distention with large pleural effusions, to pneumothorax, to neoplasms of the lung and pleura, and to compensatory emphysema of the lungs secondary to lesions of the opposite chest.

The deformity, unilateral contraction, which causes lowering of the shoulder and narrowing of the intercostal spaces on the affected side with some spinal curvature, is caused by chronic pulmonary tuberculosis, interstitial pneumonia, pleural adhesions, and chronic compression of the lung by pleural effusions.

Bulging in the cardiac region, which is most frequent and noticeable in young children, may mean enlargement of the heart, pericardial effusion, or forward dislocation of the heart by pressure of a new growth. Simple rapid breathing, usually attended by shallowness of the respiratory excursion, occurs normally in young children, and is the result of active exercise, although breathing is deep, as well as rapid.

Owing to the different positions of the heart of the child as compared to that of the adult, the various sound areas also differ and vary at different periods of childhood in accordance with the changing position of the heart. Before the sixth year the mitral area corresponds with the apex beat at a point in the nipple line, or not more than one-fourth inch within nipple

line in the fourth interspace. In very young children the aortic area is over the sternum or at its immediate right border, at level of the second or third interspace, while in older children it is slightly to the right of the sternum. In an infant both heart sounds are high pitched and short, the muscle sounds appearing later in life. There are cardiac murmurs in a large proportion of all children without disease of the heart (Cabot). In such cases the heart is perfectly normal in size, sounds, etc., but one finds a murmur.

**Abdominal examination:** Is there any distension, sunken abdomen, loss of abdominal tone, enlarged spleen and liver, abdominal masses or fluid? "Pot-belly" and umbilical hernia are quite characteristic of rickets.

After we have completed our examination thus far, we return to the mouth and throat, noticing first the teeth, if there are any; next the tongue. By using a wooden tongue depressor or teaspoon we can get a good view of the throat and observe the tonsils. The best view can be obtained by daylight before a window, or a light a little behind and above the attendant's right shoulder furnishes satisfactory illumination.

In taking up the acute diseases of childhood, we should always direct our attention to several signs and symptoms which are prominent. First the respirations. The normal respiratory cycle consists of an active inspiratory effort and a passive expiratory phase followed by a pause, the relative duration of the two movements being thus expressed: inspiration: expiration ::5:6. The respiratory pulse ratio averages about 1:4. In adults the normal respiratory frequency is from 16 to 24 to the minute, while in children, 44 in the new-born to 26 in the five-year-old child.

In children respiration is of the abdominal or diaphragmatic type. Accelerated respiration is met with in acute fevers, in pneumonia and tuberculosis. Dyspnea, cyanosis and distressing cough in catarrhal or broncho-pneumonia are the objective symptoms to which our attention should be directed.

Fever may not be an index of the gravity of a disease. In tonsilitis, stomatitis and acute indigestion we frequently find a temperature of 103° to 105° F. These ailments respond quickly

to treatment, but in pneumonia, scarlet fever, diphtheria and typhoid, a temperature of 104° F. is a symptom of considerable import, as indicating the severity of the infection. We must keep in mind that it is not the fever itself, but the conditions back of it which make it a sign of clinical value.

Obscure elevations of temperature, if persistent, following the acute catarrhal affections of the upper respiratory tract are sometimes explained by a suppurating process in the middle ear without other symptoms than the fever. A small area of encysted empyema may explain a persistent temperature elevation. Obscure temperature for a week or two may prove to be as mild typhoid. Pyelitis, although several specimens of urine do not reveal pus, produces slight temperature.

The gastric symptoms may be the most noticeable of symptoms in these acute conditions. The gastric indigestion is manifested in sudden repeated vomitings, often with fever, always prostration. After a few hours there is evidence of bowel disturbance. A high enema should always be given as the initial treatment in any illness of any nature in which there is acute vomiting with absence of free bowel action.

We should always be on guard as to any of the infectious diseases. Chronic diseases of some standing are frequently overlooked, especially tuberculosis and syphilis. In tuberculosis we must not forget the cervical adenitis, tuberculosis of the bones and joints. The diagnosis of any condition of such great importance to the patient as hip disease or spinal involvement, should not be neglected or passed over lightly. Vigorous bodily resistance is the best insurance against tuberculosis. Although the tonsil is looked upon as a portal for frequent entrance of the disease, this organ itself has been found to be tuberculous in very few instances. In 90 per cent of all cases of tuberculous lymphadenitis the cervical glands are involved, and chronic inflammation in these glands, when well advanced, is usually aggravated by the presence of infecting organisms of the staphylococcus or streptococcus groups.

Syphilis in children is usually due to direct inheritance, although acquired cases are encountered. When we find any evidences of en-



larged epitrochlear glands we are to be on our guard for other findings suggestive of syphilis, such as dwarfed nails which are dry and break easily, the characteristic deformity which has been called the "bird claw" nail. Deformity of the bones, especially of the tibia, and other long bones should at once suggest to us the possibility of late syphilitic changes. Among less frequent bone changes in late hereditary syphilis is a periostitis leading to bone absorption. This is seen on the surface of the cranial bones, causing rough areas on the bone surface. The "saddle nose" caused by a destructive septum is quite often seen in congenital syphilis. Notched, peg-shaped teeth known as Hutchinson's teeth are a fairly characteristic finding. Other bone conditions are rarefactions of bone in the neighborhood of the epiphyses; such manifest themselves to us upon examination by the patient's complaint of pain upon moving the limbs or different parts of the body. The child makes no attempt to change the position of the limb affected. The joints may show some swelling.

We must differentiate between scurvy and "rheumatism." Scurvy occurs under eighteen months, while "rheumatism" is a disease of childhood, not early infancy. There is no fever in scurvy. The absence of other signs of syphilis and a negative Wassermann test, differentiate it from syphilis.

An enlarged thymus gland causing a condition known as status lymphaticus must be kept in mind. The lymph nodes of the tracheo-bronchial region are enlarged. All the lymph tissues about the pharynx and all the lymph nodes of the body are greatly hypertrophied. In early infancy this is one of the explanations of sudden death occurring after slight causes, and often without any apparent cause. Frequently the history is this: a child previously regarded as healthy, is taken with a convulsion followed by a high temperature, preceding which there may have been some pulmonary signs suggesting a beginning broncho-pneumonia. The convulsions recur at short intervals, and death occurs in a few hours, often in convulsions. While this condition may exist for an indefinite time without producing any symptoms, it undoubtedly often determines a fatal outcome of what might otherwise have

been a mild illness or a trivial accident. It is one of the most frequent explanations of unexpected death from such slight causes as exploratory puncture or the injection of antitoxin.

Hernias, no matter how small, should always receive attention. The most common, perhaps, in infants is the umbilical hernia. Treatment consists in retaining the hernia and allowing the opening to close. Usually all that is necessary is reducing the hernia and placing a strip of adhesive plaster two inches wide and sufficiently long to hold fast the skin. This should be changed every fifth day so as to prevent irritation of the skin.

Inguinal hernia is rare in females but comparatively frequent in males. Sometimes double herniae occur. The direct and short course of the inguinal canal predispose to inguinal herniae. In the infant the internal abdominal ring is almost directly behind the external ring, and on the same level. Incomplete closures of the inner opening, combined with weakness of the peritoneum in the region of the ring, thus affords easy egress to the hernia. At the femoral canals, on the contrary, the possible hernial opening is quite protected, owing to the close relationship in the child between the anterior superior iliac spine, Poupart's ligament, and the spine of the pubes. Consequently, femoral hernia is rare in childhood. A direct cause of hernia is the pressure exerted by the abdominal muscles in crying, and in paroxysms of whooping cough. Inguinal hernia in infants is usually readily reduceable and this makes a positive diagnosis. Strangulated inguinal hernia may be confused with hydrocele of the cord, undescended testicle, and enlarged inguinal glands. In hydrocele, the tumor is translucent. In undescended testicle, the testicle is absent from the scrotum and may be demonstrated in the canal as a small ovoid, movable mass.

In girl babies and older children, careful note should be made of the vagina. Inflammation of the mucous membrane of the external genitalia may cause itching and burning of the parts. In some cases there is a discharge resembling that of gonorrheal infection, and must be differentiated through bacteriologic examination.



Gonorrheal vulvo-vaginitis is more prevalent than some would have us think. In infants and young girls there may be a redness of the vulva without discharge, or there may be muco-purulent or purulent discharge. It is a mistake to suppose there must be a visible discharge in each case. The most frequent complications are conjunctivitis and arthritis.

In the physical examination should be included the examinations of the urine in every case wherever it is possible. It takes but a few minutes to examine the urine for albumin, sugar, acidity, and specific gravity. It is not essential that one must have a well equipped laboratory. Any general practitioner can examine a specimen of urine in his office, and know somewhat more about his case than before examination of that specimen.

It is of importance if we find albumin in the urine to keep close watch of that patient. A great many times this may be a purely functional albuminuria. But many patients who for a considerable time were thought to have only functional albuminuria have ultimately developed nephritis.

Pus in the urine, coming from the pelvis of the kidney, may indicate, if the condition is an acute one, pyelitis, pyelonephritis or pyonephrosis; if it is chronic, it points to renal tuberculosis or calculus.

Too often the physician does not take the time to carefully examine the urine. More is learned by the urine examination in many instances than any other way. It should be made a routine practice to always examine a specimen of urine in every case. Fewer mistaken diagnoses will then be made. If we stop to think that it takes only a very few more minutes of our time to make these few tests and all that is needed are a few test tubes with the solutions that any practitioner has in his office, we will begin to try it out if we have not already.

Blood examinations should also be made, but by this I do not mean the difficult time-taking blood examinations. In most cases all that is necessary is to know the hemoglobin, which can easily be determined by the Talquist paper test. Although this test is considered somewhat inaccurate it is accurate enough for all

purposes in our work. Occasionally it may be necessary to have a leucocyte count made.

The importance of the Wassermann test needs much emphasis. In the primary stage a positive reaction may be looked upon as conclusive, and indicates syphilis in practically all cases; if negative it may be syphilis, nor does it exclude syphilis. In congenital cases the reaction is strongly positive even when signs of the disease are absent. The mothers of these children usually give a positive reaction. In infants and young children enough blood, 1 c. c., can be obtained from the big toe or heel of the foot. In older children the vein at the bend of the elbow affords a good blood supply.

In 98 per cent of all cases the general practitioner can do the necessary laboratory work and arrive at a careful diagnosis.

In conclusion I will say that I have taken up briefly some of the more essential points in the physical diagnosis of children. I have tried to bring out the fact that it is not necessary to have a well equipped laboratory and the patient in a hospital to make a careful accurate diagnosis. All that I have mentioned can be easily done in the average equipped office and at home.

Common sense thoroughness is the one essential necessary. I, therefore, make this a plea for more careful examinations of every patient. No matter how trivial the case may seem upon first sight, without your conscientious and careful work you have neither benefited your patient nor yourself.

## LET POTATOES FIGHT

They Save Wheat.  
When you eat Potatoes



don't  
eat  
Bread



U.S. FOOD ADMINISTRATION

# A BRIEF SUMMARY OF ONE THOUSAND CONSECUTIVE CASES OF CONFINEMENT.\*

F. H. KNICKERBOCKER, M. D.,  
*Staples, Minn.*

In carefully going over this record of ten hundred consecutive cases of confinement, I find that out of 980 women, of whom the item was noted, 309 were primiparae. The oldest woman was 47, the youngest 16—and there were several of that age. Four women died. Of the last 500, none died.

I shall briefly review the cases of those who died:

No. 540, age 43, was found well along in labor—mind dull, nearly comatose, very drop-sical—and had had two or three convulsions before I saw her. I had had no knowledge of the case before. I delivered quickly with forceps. Baby all right. Woman became comatose, and, despite the usual treatment energetically carried out, woman, after about 20 hours had several convulsions, and died.

No. 646 was taken suddenly, on the 4th day, with great pain, high fever, and a rapidly developing general peritonitis. I thought it was probably due to a ruptured appendix. She was sent to the hospital in a desperate condition; was operated upon, I think; and died in a day or two. The exact cause of trouble I do not know. Perhaps Dr. Ide can recall the case. Possibly an earlier operation, without the disturbance of removal, might have given her a better chance.

No. 385 was gasping her last as I entered the room, and blood was everywhere from placenta previa. Child was cross presentation but easily turned, and was delivered quickly, but could not be revived.

No. 685 I found with a very severe smallpox, which they had been concealing. It was confluent, in the pustular stage. The woman

looked hardly human. Pulse small, weak, and rapid. Delivered without trouble twins of 6 and 6½ pounds. Woman succumbed, as might be expected in such a condition, about an hour after labor. I vaccinated both babies. It worked in one, but not in the other. The one whose vaccination did not work had smallpox in about two weeks, but in mild form, and I think recovered.

Two women had measles in severe form at the time of labor, No. 77 and No. 80—both 1917 cases and within a few days of each other. The baby of No. 77 contracted measles in about a week or ten days, and died in a few days. The child of No. 80 did not contract the disease. Both women did very well.

Two women had fever and were pretty sick from some sort of infection. No. 167 had an irregular fever, at times very high, and more or less pain. No unusual discharge, no swelling. The trouble seemed to be in the veins of the pelvis. Dr. Thabes saw this case with me. No. 602 had a more constant and steady fever, not much pain except headache. Both women recovered perfectly, and are well now. The first one was sick three or four weeks, the last one about two weeks.

Woman No. 645 had a ruptured appendix, and was operated upon by Dr. Thabes the third day after labor. She was in a desperate condition—almost pulseless, and full of stinking pus, but recovered, and has had children since. The operation was at the home by lamp-light, or the lantern dimly burning.

No. 900 had a small accessory placenta which caused some flowing a few hours after labor. It was a perfect little placenta about the size of a small cookie, and with a slender cord, which I think must have run into the larger cord.

No. 188 when two or three months pregnant had an operation for appendicitis and hernia. She had no trouble in labor, and has another baby since that pregnancy. Dr. Ide will recall the case.

There were six cases of eclampsia. All recovered except the one whose history has been given. One woman had a wooden leg, and an-

\*Read before the Upper Mississippi Medical Society, at Brainerd, Minn., January 8, 1918

kylosed hip with adducted thigh. Delivery was not impossible, but mighty awkward.

There were 1,010 babies—eight pairs of twins, and one bunch of triplets. I want to tell you about the triplets case. The woman was very large, Swedish, 41 years of age. The uterus was dilated, and breech of No. 1 presenting—soon delivered—about 7 months, and small. This one lived for a few weeks. The bag of waters of No. 2 appeared, which I ruptured, and nearly drowned out the premises—I never saw such a large quantity. No. 2 was rather blue, and lived but a day or two. No. 3 came along in his little sac, but was dead on arrival. The woman must have had labor prematurely on account of the great quantity of amniotic fluid. She was enormously distended, and something had to give.

There were 21 breech presentations, of which 5 were born dead. There were 3 footlings with none born dead. Three face with one born dead—not because it was a face presentation, but because a rather short cord was wound three times tightly around the neck. A very short cord will sometimes impede labor—I have had two such cases. You can only guess at the trouble before the baby is born.

There were two cross presentations—one already mentioned, where the woman was dying from placenta previa, and one a very difficult podalic version. In one case the shoulder presented, but the woman had borne many children, and it was not difficult, by getting her in the right posture, to get it out of the way and the head engaged. Posture is a very important matter to study.

There was one brow position. The baby had a bulging forehead—looked like LaFollette. I fancy that he was a brow case—unfortunately not still-born—nor still since.

The occiput was posterior once, and born in that position without forceps, pituitrin, or a ruptured perineum.

In the last five or six hundred cases chloroform was used in practically every case. Pituitrin at times, but only when the pains were unsatisfactory, the os dilated, the passenger in proper position, and the way clear; and then rarely in a primipara. The forceps were used 22 times—in 3 cases on account of eclampsia. In the last 500 cases the forceps were used 8

times. Two of the forceps babies were born dead. The forceps were used with great satisfaction without chloroform three times. This was before pituitrin was heard of. One difficult forceps case had a complete central rupture of the perineum. It was in the country, and I had nothing with me but a big perineum needle and some very heavy silver wire. I used it, putting one deep suture, being careful not to enter the rectum, and catching the vagina just above the tear. It was not pulled very tight—just enough to bring everything together. I did this with some confidence because I had done it once before many years ago with success. It wasn't a scientific, nor artistic job, but the result was perfect. I have attended the woman twice since, and she has a good perineum.

Besides the five breech cases, the two forceps cases, and the face case, there were eight still-born babies—16 in all. Two of the breech cases had a right to die. They were large and very difficult to get. The legs were extended up over the belly and chest, and both arms were over the back of the neck. Two babies died on account of prolapsed cord, impossible to replace when I saw them. No. 981 was covered with dark spots, and had a large, hard tumor of the liver—syphilitic, I think. No. 328 was a seven months still-born baby with rigor mortis—the only case of the kind I ever saw. It was as stiff as a stick. One baby was born dead because the woman had glycosuria. The others just died—I don't know why. Five or six died in a few days from feebleness—usually due to prematurity. One died on the second or third day from cerebral hemorrhage—hemiplegia. It began with convulsive twitchings of one side soon followed with one-sided paralysis and death in a few hours. The labor had not been difficult. Nos. 148 and 933 had spina bifida with club feet, etc.,—one of them hydrocephalic somewhat at birth. They both lived several months. No. 830 had double hare-lip and cleft palate. No. 992 had congenital cataract. No. 720 had six fingers and six toes. I wanted to prune him, but the parents seemed to think it a distinction to be proud of, and the boy is still going about with his six fingers.

Of the last 500 babies the average weight was 7.94 pounds. This is heavier than the average

as given in the books, but is right, for I weighed them. The heaviest was 13 pounds, and the lightest, that lived, was 3 pounds. In a German community where I lived for seven years, the average weight was about the same as that given in the books. The women were hard out-of-doors working animals. They did not have to work, for all had plenty of money, but they had the habit. I find that male and female babies are about equal in number—there being a few more females.

Of 500 babies, 264 were born between 6 P. M. and 6 A. M., and 236 from 6 A. M. to 6 P. M. The average time spent by me from the time of arrival at the house until the child was born, was, in the last 500 cases 1.07 hours. In looking over this record I was astonished when I came to the earlier half of it to see how much longer time I spent with cases then than now; and astonished to read "no chloroform" in case after case—or "a little chloroform," which meant a little as the head was about to pass the perineum. I am sure that the last 500 women have felt better after labor, and have been up sooner and in better condition than the first 500. It is the tedious infernal pain of the first stage that wears a woman out. I don't let it last half as long as I used to. It is all nonsense to let a woman walk about, and suffer for hours during the dilatation period. When I find a woman with the os beginning to dilate, and with good pains, instead of having her walk about, I have her go to bed. If it is a first pregnancy and labor just beginning, I give a hypodermic of morphine and atropine. I heard a professor of obstetrics give a clinical lecture at Harper's Hospital in Detroit, a year ago last July, and he said that in some cases it was justifiable to give from  $1/10$  to  $1/8$  of a grain of morphine in the very early stage. I do not know what he expects to accomplish with just a stimulating dose. When you give it at all, you want enough to make the woman feel "dopey"—perhaps she may fall asleep for half an hour, or sleep, between pains. If labor has really started, the pains will not cease. Don't stay away too long—in about two hours you will find the os completely dilated, and the woman will tell you

that the pains did not leave her. If you stay too long the whole business may be over—and you'll miss your fee. If the os is dilated a little and the pains good, have the woman go to bed, and give chloroform. It is in this stage that the woman needs chloroform, if ever. Give enough to make her doze between pains or you will not accomplish your object. As a pain comes tell her to bear down. She can do so because it will not hurt so atrociously. If the presentation and position are right, and the os the size of a dollar, break the sac. This will make the pains harder, and with your chloroform there will be no danger of damage to the cervix. It is well enough to *know* that the woman is bearing down, for often, even one who has had children will have the appearance of the most intense straining, when in reality she is holding the thing back. You cannot tell by looking at her or by the way she pulls with her hands. Keep your finger on the head for a while until you are sure that she has learned just how to do it. If she will lift her hips an inch or two from the bed with a pain, the head will push down better. If the woman lifts her back during a pain the effort is wasted. They like to do this because it takes off the pressure. When the os is nearly dilated, often in an ordinary L O A case it will go better with the woman on her left side. The lip of the cervix will not pinch against the symphysis, and sometimes with your gloved finger you can push the cervix back and hold it there while a pain slides the occiput down over it. The head will then soon be on the perineum when the woman feels impelled to push, and no chloroform is needed until the last few pains. The first stage of labor can be greatly shortened and made easier by the proper use of chloroform. It is of no account unless you give enough, and the woman will not help if you give too much. I have wondered if my last 500 were not more free from forceps cases because I gave chloroform in the way described. Many women will be exhausted and nervous after a long first stage.

As a matter of trivial interest, I might say that I advise my women to be bolstered up in bed about the third or fourth day, to be helped

into an easy chair on about the fifth or sixth day, but not to walk about under two weeks.

Mastitis with abscess has been extremely rare in this series of cases. I try to impress the importance of having any soreness of the nipples treated at once.

I have never had any serious trouble with the umbilicus. Sometimes after separation of the cord there will be a little granulation tissue. The best application for this is a little powdered nitrate of lead. Dust on, and in 12 to 24 hours the granulation will be gone and the surface

dry. It will not irritate the skin unless applied several times.

All of the cases in this series were Staples cases. I lived once in a Norwegian community where the people were largely new-comers, and did not live very well—I had there 56 cases with 4 pairs of twins. In the German community mentioned there were two or three hundred cases with many malpositions. I think you will find that most of the mal-positions occur in women who have borne many children, where the child is small, or with a large quantity of amniotic fluid.



"A WORD TO THE WISE"



# Minnesota Medicine

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## EDITORIAL

### THE ANNUAL MEETING OF THE STATE MEDICAL ASSOCIATION.

On August 29th and 30th, the Annual Meeting of the Minnesota State Medical Association will be held in Duluth. In these strenuous times when matters pertaining to the future are so much in doubt, when to the physician's regular duties—ordinarily sufficiently arduous— innumerable unusual tasks are added, when physicians, like others, feel the pressure of the high cost of living and the necessity of conservation of time and energy, it is perhaps well to pause and consider whether or not individual, na-

tional, and even world-wide interests are served and supported by withdrawing for a few days from our busy routine to rub elbows and exchange ideas with our fellow practitioners.

Never before in the history of medicine has the necessity for scientifically trained physicians been so manifest. The great war has evolved demands upon the resources of scientific medicine which are insistent. To every member of the Minnesota State Medical Association the following propositions must present themselves: Is it practically a duty to attend this particular convention, or should I remain at home? In what way would the interests of my community, locally and at large, be best served? Would I be adequately repaid for the outlay in attending a well conducted and enthusiastic state meeting with the benefits of the social intercourse with my fellows as well as the opportunity to participate in the discussion of scientific and military propositions which present themselves at this time?

To these questions there can be but one answer. The benefits resulting from a congress of this kind are so far-reaching that, whether considered from the standpoint of duty, policy or personal pleasure, the answer is the same. While our brothers in the service are making such heroic sacrifices it behooves us who are still at home to keep the fires burning and to advance the cause in every way possible. As regards policy, one need only to glance over the list of registrants of former years to be convinced that it is here that the successful (using the term in its broader sense) doctor is met. The stay-at-home is usually the fellow who is "unlucky,"—"Fate has interfered" with his success. Considered from the angle of personal pleasure, in addition to the feeling of gratification in having done his duty and improved his time, he has the advantage of a recess from the work at home, for, although attending medical meetings is a strenuous undertaking, it varies the regular routine to such an extent that one usually drops back into the harness with added vigor and zest.

The scientific program which is published in these columns is one of special excellence and importance. Particular attention is directed to the announcement by the Committee of Arrangements that a monster patriotic meeting to be addressed by speakers of national impor-

tance will be held on the evening of August 29th. The profession of Duluth judging by past performances can be trusted to furnish entertainment for the visiting physicians and their companions that they cannot well afford to miss. The condition of the highways is such that undoubtedly a large number of physicians in the state will travel to Duluth by motor this year, and those who take the opportunity to visit the great mining centers at Eveleth, Hibbing, and Virginia will be well repaid for the extra day or two so spent.

The organization of the American medical profession is now of such a nature that it has become one of great influence. The close relation between the county, state and national societies makes for cohesion and brings to the individual physician the opportunity to make his influence felt. Our State Society ranks high, and is one of the leading associations in this country. Let us make it also second to none in enthusiasm and zeal. "*Minnesota Medicine*" will be present at an annual meeting for the first time. She greets you and hopes that your attendance will show that you believe, as she does, that it *is* worth while.

## MINNESOTA STATE MEDICAL ASSOCIATION

### ANNUAL MEETING

August 29th and 30th, 1918  
DULUTH, MINNESOTA

#### Provisional Program

#### SECTION ON MEDICINE.

Henry L. Ulrich, Chairman, Minneapolis.

T. R. Martin, Secretary, Duluth.

1. "The Problem of Humidity Indoors."  
E. P. Lyon, Dean of Medical School,  
University of Minnesota, Minneapolis.
2. "The Principles of Foreign Protein Therapy."  
W. P. Larson, Prof. of Bacteriology,  
University of Minnesota, Minneapolis.
3. "Effects of Underfeeding and Refeeding upon Growth."  
C. M. Jackson, Prof. of Anatomy, Uni-  
versity of Minnesota, Minneapolis.
4. "Toxic Dermatitis."  
E. L. Brown, Prof. of Pharmacology,  
University of Minnesota, Minneapolis.
5. "A Medical Service with the British Expeditionary Forces in France."  
E. T. F. Richards, Asst. Prof. of Medicine,  
University of Minnesota, St. Paul.
6. "Hemolytic Icterus."  
John P. Schneider, Asst. Prof. of Medicine,  
University of Minnesota, Minneapolis.
7. "The Therapeutic Effects of Overfeeding in Pernicious Anemia."  
T. A. Peppard, Instructor in Medicine,  
University of Minnesota, Minneapolis.
8. "Poliomyelitis."  
E. C. Rosenow, Mayo Clinic, Rochester.
9. "The Thyroid and Metabolism."  
H. S. Plummer, Mayo Clinic, Rochester.
10. "The Blood Picture in Exophthalmic Goitre."  
W. A. Plummer, Mayo Clinic, Rochester.
11. "The Nervous Symptoms in Pernicious Anemia."  
H. W. Woltmann, Mayo Clinic, Rochester.
12. "Poliomyelitis in Minnesota."  
W. P. Greene, State Board of Health,  
Minneapolis.
13. "Neuro-Circulatory Asthenia (Irritable Heart), Study of 35,000 Draft Recruits."  
E. L. Tuohy, Duluth.
14. "Rickets."  
C. A. Scherer, Duluth.
15. "Pellagra."  
N. L. Linnemann, Duluth.
16. "Acidosis."  
S. H. Boyer, Duluth.
17. "The Diagnosis of Early Tuberculosis."  
Geo. Douglas Head, Minneapolis.
18. "Problems Arising in Local Draft Boards."  
John W. Bell, Minneapolis.

**Social Medicine for the Combined Sections.**

19. "The Second Line of Defense."  
Prof. Arthur Todd, University of Minnesota.
20. "Papers on Public Health, Aspects of Venereal Diseases."  
(a) Program of Control of Venereal Diseases by Board of Health.  
Harry Irvine, Director of Bureau of Venereal Disease, State Board of Health.  
(b) What it May Accomplish.  
Mabel S. Ulrich, Director of Education, Bureau of Venereal Diseases, State Board of Health, Minneapolis.
14. "The Medical Man in War."  
Col. Henry S. Greenleaf, Ft. Snelling.
15. "On Gall-bladder Work."  
J. S. Holbrook, Mankato.
16. J. C. Masson, Rochester.
17. H. P. Ritchie, St. Paul.
18. E. S. Muir, Winona.
19. J. A. Thabes, Brainerd.

The Committee of Arrangements announces that there will be a Patriotic Meeting on the evening of August 29th, which will be addressed by speakers of National Prominence.

**SECTION ON SURGERY.**

- Archibald MacLaren, Chairman, St. Paul.  
A. W. Ide, Secretary, Brainerd.
1. "Prostatic Stone."  
E. S. Judd, Rochester.
  2. "Transverse Incisions in the Upper Abdomen."  
R. E. Farr, Minneapolis.
  3. "Fractures."  
L. E. Daugherty, St. Paul.
  4. A. Schwyzer, St. Paul.
  5. "The Causes of Disability Resulting from Industrial Accidents to the Lower Extremity."  
J. R. Kuth, Duluth.
  6. "Hernia with Undescended Testicle, Report of Five Cases."  
W. J. Cochrane, Lake City.
  7. C. B. Lewis, St. Cloud.
  8. A. C. Strachauer, Minneapolis.
  9. W. J. Mayo, Rochester.
  10. Wm. R. Bagley, Duluth.
  11. "Surgical Results in the Removal of Spinal Cord Tumors."  
A. W. Adson, Rochester.
  12. A. N. Collins, Duluth.
  13. "Value of Enterostomy in Acute Peritonitis."  
H. C. Cooney, Princeton.

**NOTICE.**

Dr. Ralph St. J. Perry, of Minneapolis, will be in Duluth at the meeting of the Minnesota State Medical Association, August 28, 29, and 30, to represent the Board of Examiners for the Medical Reserve Corps, and any physician wishing to be examined can see him during this meeting.

**SILVER NITRATE SOLUTION.****Sent Free to Physicians.**

Since 1916 the law of Minnesota has required attending physicians and midwives to treat the eyes of every new-born infant with a one per cent. solution of silver nitrate.

The legislature of 1917 provided funds for the purchase and free distribution of convenient outfits for such treatment, and at least one outfit was sent to each physician in the state in August, 1917, by the Minnesota State Board of Health. Each outfit consists of six ampules of the solution with needle for puncturing the ampule. The ampule is made of paraffin wax and the solution contained in it will not lose its strength for some years. Further supplies of these ampules will be sent free of charge to any physician or midwife, on application to the State Board of Health in the State Capitol, St. Paul.

Very few requests for these ampules are being received from physicians. This must be either because the law is being ignored or because it is not understood that ample supplies of these ampules are to be had for the asking.

## TO THE PHYSICIANS OF THE STATE OF MINNESOTA.

The Director of the Children's Bureau of the State Board of Control is anxious to have the attention of all physicians of the state drawn to the fact that the problems involved in the care of the illegitimate child are numerous and perplexing and that in helping to solve them the very complete co-operation of the profession is very much to be desired. Numerous reports have come to the attention of the Board of Control that physicians and others throughout the state are taking infants from their mothers and parents and placing them in foster homes, or are assisting mothers to place out children without the required legal formalities. These reports come with special reference to the children of unmarried mothers. No doubt this procedure is due to lack of information concerning the new laws which govern the matter. Under Chapter 212 of the Laws of 1917, a mother or a guardian can no longer give away a child, either by verbal agreement or by written assignment. Permanent rights in a child can only be transferred from the mother, the father, or guardian, by an "order or decree of court." This order can be procured in three ways:

1. A petition on the part of the proposed foster parents to the probate court for letters of guardianship.
2. A petition in the juvenile court to have the child declared dependent or neglected, and asking that the petitioners be made guardian.
3. A petition in the district court to adopt the child.

All persons are advised to take up with a duly authorized child-placing agency, or with a county child welfare board, or with the State Board of Control, any matters relating to the transfer of rights in children and their placement in homes other than that of the parent or legal guardian.

## GOOD WORK BY THE AMERICAN RED CROSS IN FRANCE.

France is finding in tuberculosis one of the worst of war's by-products. Before the conflict had continued two years her hospitals were filled with soldiers suffering from the plague, and facilities for adequate care of them were lacking. The following facts as to measures invoked are extracted from a recent report by Dr. William Charles White, Chief of the Bureau of Tuberculosis, of the American Red Cross in France:

When the American Red Cross, in co-operation with the Rockefeller Foundation, entered the fight against tuberculosis in France, the Service de Santé of the Army was utilizing all the main French institutions, and there was little room available for the women, children and old men suffering from the disease. Last October there were 8,879 tuberculous French soldiers not yet discharged from service, and for these 6,521 beds had been provided in thirty-seven hospitals. Between August, 1914, and November, 1917, there were 80,551 soldiers discharged from the army on account of tuberculosis and the French Department of the Interior undertook to provide for their care by means of Stations Sanitaires and departmental committees.

Until recently practically no provision had been made for the repatriates—that portion of the population which had been engulfed by the German advance into France and Belgium, and, being no longer of any economic use to Germany, the aged, the young, and the diseased had been sent back into France. A large proportion of these are consumptive. The wretched housing conditions in which many refugees were compelled to live in Paris and elsewhere made them peculiarly subject to tuberculosis.

A careful survey of the field indicated that the Red Cross could render most effective assistance among these groups. The first opportunity for usefulness came in the survey of conditions in the tuberculosis barracks which had been provided by the Assistance Publique in connection with the large hospitals and almshouses in Paris. There were 1,052 beds in them, yet only 174 were occupied. Unattractive conditions seemed to explain, in large part,



the failure of the sick to make full use of this institution. The American Red Cross thereupon increased the nursing force, established diet kitchens and recreation rooms, and provided additional clothing and materials, such as bed covers and flowers. The institution quickly became more popular and soon was caring for 657 patients. Later, new cure halls, dining rooms, and recreation rooms, were constructed by the Red Cross.

A survey of the institutions outside of Paris showed that these provided 11,000 beds for a population of 39,500,000 persons, with a total death rate from tuberculosis in 1913 of 84,443. Many of these institutions required additional bedding, food, and equipment, which the American Red Cross undertook to furnish at a cost to it of approximately 100,000 francs a month.

Another plan similar to the Home Hospital plan in New York City now is being used in France, especially for those refugee and repatriate families with tuberculosis members. These, if allowed to go into ordinary houses well might spread infection. The new plan contemplates placing such families in small houses especially constructed for the care of a tuberculosis member. Each house is composed of three rooms—two sleeping rooms and a living room—with a small porch for the patient. The children will be placed in open-air schools, and those able to work will be given vocational training in such trades as gardening, carpentry, tailoring and shoemaking. The domiciliary care of the consumptive, it is believed, is one of the most important factors in the war against tuberculosis in France, as elsewhere.

After studying the question of the relation of tuberculosis to the various armies, it was decided that the American army, no matter how careful the exclusion of tuberculosis cases in the draft, would still have to deal with a group of cases which would develop tuberculosis from existing lesions not possible of diagnosis in earlier examinations. It was thought that this was a field of work in which the American Red Cross could give assistance to our own army in France. It seemed obvious that there would appear certain pneumonic types of tuberculosis, certain acute military cases, severe hemorrhagic and pleuritic cases, and probably a number of cases of tuberculosis in parts of the body other than the lungs.

An offer to the Army Headquarters to provide a hospital near the shipping ports where the Red Cross would be given permission to take care of such cases needing attention prior to their return home, has been accepted. The American Red Cross will undertake the provision of one such hospital which then will be turned over to the army. A similar institution may be provided at a second point.

Four tuberculosis hospitals in France are now maintained and conducted solely by the American Red Cross and ninety-six French hospitals are aided with funds and supplies, and in addition much educational and visitational work is being done.

## OBITUARY

Lieut. Col. Frank C. Todd, commandant of the base hospital at Camp Dodge, Iowa, one of Minneapolis' best known surgeons and recognized as among the foremost hospital authorities in the world, died July 4th, in the Presbyterian hospital at Chicago of pneumonia. He was 49 years old. The widow and four children, who were with him at the time of his death, survive.

Lieut. Col. Todd's illness was of short duration. He had contracted a heavy cold while on an inspection tour of cantonment hospitals for the government, and in Chicago, a few days later developed pneumonia. He immediately went to the Presbyterian hospital in that city for treatment.

Dr. Todd was one of the first of Minneapolis' medical men to volunteer his services when war was declared and was given the rank of major. His reputation as a hospital authority resulted in his being placed second in command at the base hospital at Camp Dodge.

Federal experts, inspecting military hospitals a year ago, pronounced the Camp Dodge hospital the most perfect organization of its kind in this country. Lieut. Col. Todd recently had been recommended for the command of a hospital in France.

At the time of his active participation in the war, Lieut. Col. Todd was chief of the eye, ear, nose and throat department of the University of Minnesota.

Dr. Todd was born in Minneapolis, October 15, 1869, and graduated from the dental col-

lege of the university in 1892, later taking the full course in medicine. Post graduate work in New York, London, Paris, Vienna and Berlin followed, and in 1899 he became professor of diseases of the eye, ear, nose and throat in the university and assumed the duties of chief of staff of that department in 1902, a post he held at the time of his death. The same year Dr. Todd, who had been active in the general work of his profession, was elected president of the Hennepin County Medical Association.

During the national convention of the American Medical Association in Minneapolis in 1913, Dr. Todd was chosen second vice president of the organization for the ensuing year.

The body was brought to Minneapolis for burial, and the funeral was held July 6th, at 2:30 from the Church of the Redeemer.

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**A MEMORIAL TO DR. FRANK C. TODD,  
CHIEF OF THE DEPARTMENT OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY,  
ADOPTED BY THE ADMINISTRATIVE BOARD OF THE MEDICAL SCHOOL  
OF THE UNIVERSITY OF MINNESOTA,  
JULY, 5, 1918.**

It is with profound sorrow that the Medical School of the University of Minnesota receives the tidings of the sudden death of Frank C. Todd. These tidings stir the depths of affectionate memory, welling up through many years of intimate association, in the minds of his colleagues. They touch the spring of thoughts of him which "lie too deep for tears."

All they would say of him sums itself up in this: As student, teacher, surgeon, executive officer, and soldier he has done honor to his Alma Mater, to his community, to his state and to his country. As a friend he has been faithful alike in large and in little things. As a counselor and organizer his particular genius shone. He has always been at the point of progress in the development of his school and his profession and both have recognized, and have been fortunate in, his leadership.

To his family the faculty would tender the sympathy of its members in their untimely bereavement. Theirs is the rich legacy of the memory of a good father and a rare companion.

He has died in the service of his country as truly as though he were actually at the front. Gratefully and loyally his associates of this school salute the spirit which from that service has passed on to the immortality of those who greatly and simply serve.

E. P. Lyon, Dean.

R. O. Beard, Secretary.

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## OF GENERAL INTEREST

Word has been received of the safe arrival overseas of Capt. J. C. Ferguson, St. Paul.

The present address of Lieut. C. M. Robiliard, M. C., Faribault, is 136th Inf., Camp Cody, Deming, N. M.

Dr. J. F. Lynn of Waseca has received his call to active service in the medical reserve corps, following his recent appointment as captain. He was ordered to proceed to Fort Oglethorpe, Ga., and report to the Commandant Medical Officers' Training Camp, Camp Greenleaf, about July 15 for a course of instruction for the army service.

Dr. Jules Gendron of Grand Rapids has been awarded a captain's commission in the medical reserve corps.

Dr. C. W. Woodruff of Chatfield has been commissioned a first lieutenant in the medical reserve corps, and was ordered to report for duty on July 14th.

Dr. William R. Murray, Minneapolis, has been appointed Acting Director of the Department of Ophthalmology, University of Minnesota.

Dr. Alexander R. Colvin of St. Paul has been commissioned a major in the medical reserve corps.

Dr. E. W. Buckley of St. Paul has arrived safely in France. He is supreme physician for the Knights of Columbus and has been sent over to France by that order to inspect their activities on the battlefield.

Dr. Ernest T. F. Richards, St. Paul, has been appointed Acting Chief of the Department of Medicine, University of Minnesota, during the absence of Dr. L. G. Rowntree, who has been commissioned a lieutenant-colonel in the national army.

Dr. Arthur Sweeney, St. Paul, is consulting neurologist, examining board of physicians, Camp Dodge, Iowa.

We are glad to announce that word has been received of the safe arrival in France of Dr. Walter Ramsey, St. Paul.

Dr. D. S. Fleischhauer has returned to Wabasha from San Antonio, Tex., where he was stationed at Camp Travis as a lieutenant in the medical reserve corps. Dr. Fleischhauer resigned because of ill health and has resumed his practice in Wabasha.

Dr. Van H. Wilcox, 3023 Dupont Ave. S., Minneapolis, has been made a captain in the medical reserve corps.

Dr. W. L. Palmer of Albert Lea has left for Camp Pike, Ark., where he will assume his duties in the medical corps with the rank of captain. Dr. Palmer is the third Albert Lea doctor to leave for army service, Major Rudolph and Captain Kamp having preceded him.

Using the captain's bridge as an improvised rostrum and the upper deck as a substitute auditorium, 13 University of Minnesota Medical School seniors, on their way to France, received their diplomas aboard ship. They were members of Base Hospital Unit No. 26 and they were the first class from the university to get their collegiate degrees on the high seas.

They had the distinction, one of them pointed out, not only of having the cap and gown exercises above the bounding billows, but of having the fateful "13" mixed up in their destinies. There were 13 in the contingent that received the 13 diplomas, they had left their training camp the 13th of the month, and they were members of unit 26—which is just twice 13.

Dr. Arthur C. Strachauer, Minneapolis, has been appointed Acting Director of the Department of Surgery of the University of Minnesota.

The following Northwest physicians were amongst those commissioned during July in the Medical Reserve Corps:

Captains—Edwin C. Anderson, East Missoula, Mont.; Willard A. Bates, Northville, S. D.; John E. Brinkman, Waterloo, Iowa; Edward J. Clark, Minneapolis; Louis H. Fales, Stevensville, Mont.; Sylvester E. Hinshaw, Newton, Iowa; John V. Johnson, New Duluth, Minn.;

Norman W. Johnson, Cedar Rapids, Iowa; Charles A. Kearney, Dubuque, Iowa; William F. Keller, Sioux Falls, S. D.; Charles S. Kennedy, Logan, Iowa; John V. Keogh, Dubuque, Iowa; Charles A. Lester, Sr., Winona, Minn.; Nicholas L. Linneman, Duluth, Minn.; Thomas B. Marquis, Livingston, Mont.; Harry E. McCall, Clearfield, Iowa; John F. McKie, Westington, S. D.; Frederick H. Rollins, St. Charles, Minn.; Alva M. Sherman, Clarinda, Iowa; Eugene M. Stansbury, Vermillion, S. D.

First Lieutenants—Ludwig W. Anderson, Atwater, Minn.; William D. J. Cremin, Sioux City, Iowa; William H. Daniels, Crookston, Minn.; Frank W. Davis, Alden, Minn.; Arthur W. Drew, Swanville, Minn.; Harry D. Earl, Jamestown, N. D.; Arthur W. Erskine, Cedar Rapids, Iowa; Gustav M. Helland, Spring Grove, Minn.; Vernard R. Hodges, Terry, S. D.; Selmar M. Johnson, Buhl, Minn.; William H. Johnston, Muscatine, Iowa; Charles A. Manahan, Marengo, Iowa; Archibald D. McCannell, Minot, N. D.; Chester A. Miller, Nevinville, Iowa; Rezin Reagan, Garretson, N. D.; Frank L. Seeoy, Sioux City, Iowa; Rollin W. Wood, Newton, Iowa; John R. Wright, Knoxville, Iowa.

A dispatch from the Associated Press announces under date of July 18th that the government is about to assume control of the entire medical profession in the United States to obtain sufficient doctors for the fast growing army, and at the same time to distribute those remaining to the localities or services where they are most needed for civilian work.

This mobilization is to be accomplished either by enrolling all doctors in a volunteer service corps, or, if the voluntary plan is not successful, by legislation providing for drafting them into government service.

Medical officers of the government believe compulsory conscription will not be necessary.

Organization plans for the volunteer medical service corps already have been made and enrollment started in a few states under authority of the Council of National Defense.

Instead of enrolling in this corps only those physicians not suitable for military service, either because of age, physical infirmity, dependency, or institutional or public need, as planned at present, the government is expected shortly to throw open the membership of all

doctors and to bind them with a pledge "during the present emergency to accept service, military or civilian, wherever, whenever, and for whatever duty he may be called by the central governing board."

Under this projected plan, the army and navy would take those physicians and surgeons best fitted for active duty, and who can be spared from civilian requirements. At the same time the government would maintain a continuous survey of the country, and assign doctors to those communities in which there are too few practitioners.

Of the 143,000 doctors in the United States, it is estimated between 80,000 and 95,000 are in active practice, and 23,000, or about one-fourth, are in the army or navy.

Nearly 50,000 will be required eventually for the army. The active practitioners remain, together with those who have retired, but who can be persuaded to resume active work, must carry on the health maintenance work in this country.

Surgeon Generals Gorgas of the army, Braisted of the navy and Blue of the public health service are considering a plan for commissioning all teachers in medical schools and assigning them to their present duties. This would constitute a means of preventing further disruption of medical teaching staffs, and at the same time recognize the public services of these men.

The Federal Trade Commission has adopted the following official names for the drugs listed below and recommends that such official names be used in connection with all written articles and advertisements, and if the proprietary brand name is to be used, to place this side by side with the official name:

Arsphenamine for the drug marketed as: Salvarsan, Diarsenol and Arsenobenzol, etc.

Neorsphenamine for the drug marketed as: Neosalvarsan, Neodiarsenol and Novarsenobenzol, etc.

Barbital for the drug marketed as Veronal.

Barbital-Sodium for the drug marketed as Medinal and Veronal-Sodium.

Procaine for the drug marketed as Novocaine.

Procaine Nitrate for the drug marketed as Novocaine Nitrate.

Phenylcinchoninic Acid for the drug marketed as Atophan.

At its regular meeting, July 9th, the State Board of Health created a Division of Child Conservation and appointed Dr. E. J. Huene-kens, of Minneapolis, as director. Two nurses who are experienced in public health work, have been employed by the Board for field work in this division.

This division will supply an agency for bringing about the permanency which is necessary to make a success of the recent campaign for examining and weighing babies. This movement as recently inaugurated by the National Children's Bureau is not intended to be more than a first step in the permanent campaign for the reduction of infant mortality.

Dr. Huenekens plans to interest local physicians and organizations in starting clinics in the larger communities throughout the state. Such a clinic is already in operation in Little Falls, and the feasibility and practical results which can be obtained have already been demonstrated. The success of this independent movement in Little Falls had much to do with the determination of the Board to undertake the organization of a Division of Child Conservation. It is felt that what has been accomplished in this one instance, can be successfully imitated in every town of 2,500 or more in the entire state.

The existence of such a clinic in any community will bring about the discovery of many babies whose health can be improved by proper suggestions as to feeding and care. Parents will be given an opportunity to secure much valuable education in the proper feeding and care of infants, and many cases will be brought to light which will need the attention of the family physician.

The successful execution of the plans of this division makes the co-operation of the members of the medical profession absolutely essential, both for getting the work under way, and for the proper treatment of the cases which these clinics will bring to light.

The work of this division is to begin at once.



## NEW AND NON-OFFICIAL REMEDIES

During June the following articles were accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

### Cutter Laboratory:

**Antipneumococcic Serum, Type I.**

### Mead, Johnson & Co.:

**Mead's Dextrin-Maltose, No. 2.**

**Mead's Dextrin-Maltose, No. 3.**

### H. K. Mulford Co.:

**Antipneumococcic Serum, Type I.**

**Antipneumococcic Serum, Polyvalent.**

### NEW AND NON-OFFICIAL REMEDIES.

**Antipneumococcus Serum.**—A serum obtained from horses immunized with virulent pneumococci. Each lot of antipneumococcic serum is submitted by the manufacturer to the U. S. Hygienic Laboratory for potency test. Early massive (from 50 Cc. to 10 Cc.) intravenous doses of a highly potent serum prepared from the type of pneumococcus present in the case to be treated are necessary. The serum used should be obtained from an animal immunized with pneumococci of the type corresponding to that present in the special case under treatment. Thus far Type I serum alone seems to be on reasonably secure clinical grounds.

**Antipneumococcus Serum, Type I, Lederle.**—Marketed in a pressure syringe containing 50 Cc. Schieffelin and Co., New York.

**Antipneumococcic Serum, Type I, P. D. & Co.**—Marketed in a piston syringe containing 50 Cc. Parke, Davis & Co., Detroit, Mich.

**Antipneumococcic Serum, Type I, Squibb.**—Marketed in vials containing 50 Cc. E. R. Squibb & Sons, New York.

**Acid. Phenylcinch.-Morgenstern.**—A brand of phenylcinchoninic acid, U. S. P. It is sold as Tablets Acid. Phenylcinch.-Morgenstern containing 0.5 gm. acid phenylcinch., and as Sodium Phenylcinch.-Water-Morgenstern, a solution of sodium phenylcinchoninate containing sodium bicarbonate and sugar and representing the equivalent of 1 gm. acid phenylcinch.-Morgenstern per fluid ounce.

**Procaine-Rector.**—A brand of procaine complying with the N. N. R. standards. Procaine is the substance which was first introduced as "novocaine." The Rector Chemical Co., Inc., New York.

**Barium Sulphate-Brady for Roentgen Ray Work.**—A brand complying with the N. N. R. standards for barium sulphate for Roentgen ray work. Geo. W. Brady & Co., Chicago. (Jour. A. M. A., June 1, 1918, p. 1599).

**Antipneumococcic Serum, Type I, Cutter.**—Marketed in vials containing 50 Cc. Cutter Laboratory, Berkeley, Cal.

**Antipneumococcic Serum, Type I, Mulford.**—Marketed in double ended vials containing 50 Cc. H. K. Mulford Co., Philadelphia, Pa.

**Antipneumococcic Serum, Polyvalent, Mulford.**—Prepared by immunizing horses with dead and living pneumococci of the three fixed types (Types I, II, III). Marketed in double-ended vials containing 50 Cc. each, with sterile needle and tubing for intravenous injection. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., June 22, 1918, p. 1923).

### PROPAGANDA FOR REFORM.

**Sodium Versus Potassium.**—When the embargo was declared on Germany, the price of potassium salts in this country began to soar. Now steps are being taken for the production of potassium in this country. In the meantime the plentiful sodium salts may, in most cases, be used instead. There is no evidence that potassium salts are superior therapeutically to sodium salts, and they are very much cheaper. Sodium acetate, sodium bicarbonate, sodium bromid, sodium chlorate and sodium hydroxid are among the sodium salts which may with advantage replace the corresponding potassium salts. (Jour. A. M. A., June 1, 1918, p. 1601).

**Misbranded Nostrums.**—The following preparations have been investigated by the federal authorities and their proprietors convicted of misbranding under the Federal Food and Drugs Act: Dr. Swan's Liver and Kidney Remedy, containing alcohol, sugar, glycerin, sodium salicylate, strychnin and some laxative plant drug, with indications of juniper.—Stuart's Calcium Wafers, containing strychnin, despite the claim that it contained no poisonous ingredient.—Turpentine Man's or Tyding's Remedy, a glucose syrup containing potassium iodid, alcohol and traces of salicylic acid, phosphates, calcium and alkaloids.—Henry's Red Gum Compound, containing heroin, chloroform, alcohol, glycerin and sugar.—Athlophoros, a solution of glycerin, sodium salicylate, oil of cinnamon and water.—Dr. Thatcher's Cholera Mixture, containing alcohol, morphin, a laxative drug, sugar and aromatics.—Dr. Thatcher's Amber Injection, containing alcohol, opium and zinc sulphate to which acetic acid had been added.—Abbott Bros. Rheumatic Remedy, containing 24 per cent. alcohol with 5 grains potassium iodid to each teaspoonful with extracts of drugs such as sarsaparilla and dandelion. (Jour. A. M. A., June 1, 1918, p. 1624).

**Orchis Extract.**—A postoffice fraud order has been issued against Fred A. Leach, doing business as the Packers' Product Company, Chicago. The business which the postoffice has declared a fraud consisted in the sale of Orchis Extract, claimed to be a remedy for lost sexual powers, etc. The federal chemists found that Orchis Extract tablets consisted of milk sugar, orchitic animal tissue, and agents

used in compressing the tablets. (Jour. A. M. A., June 8, 1918, p. 1786).

**Care in Administering Arsphenamine.**—More than the ordinary severe reactions from arsphenamine have been reported lately; hence there is need of special care at the present time in the administration of arsphenamine. The question may justly be raised if it is wise to repeat the administration at very short intervals. There also are indications to suggest the wisdom of beginning with small doses. Also, while heat may be used in dissolving the arsenobenzol brand of arsphenamine, it should be avoided in the case of the other brands which are readily soluble in water. (Jour. A. M. A., June 15, 1918, p. 1867).

**Cotarnin Hydrochlorid.**—P. J. Hanzlik reports that while the description of the actions and uses of cotarnin hydrochlorid given in New and Non-Official Remedies tentatively accepts certain current statements in the absence of definite published data, experiments with animals carried out by him demonstrate that the drug is devoid of hemostatic action. He holds that cotarnin hydrochlorid is entirely worthless as a local aemostatic. (Jour. A. M. A., June 15, 1918, p. 1883).

**Several "Mixed" Vaccines not Admitted to N. N. R.**—The Council on Pharmacy and Chemistry publishes a report announcing the rejection of a number of "mixed" vaccines. In publishing its report the Council explains its attitude toward this class of products: In view of the rapid development of bacterial therapy, the possibility for harm that attends the use of bacterial vaccines and the skepticism among experienced clinicians as to the value of vaccines representing a combination of organisms, the Council has felt that it should scrutinize the claims for such agents with exceptional care and admit to New and Non-official Remedies only those vaccine mixtures for which there is acceptable evidence to indicate that the particular mixture is rational. Experienced clinicians have generally come to the conclusion that mixed vaccines have no specific action and that any effect they may produce is due to a non-specific protein reaction. The preparations rejected in the accompanying reports are only a few of the many that are being sold by some biological houses. The report explains in detail the considerations which led to the rejection of the following preparations, all of which were considered because of inquiry received. 1. The Abbott Laboratories: M. Catarrhalis-Combined-Bacterin, B. Coli-Combined-Bacterin, Pertussis-Combined-Bacterin, Streptococcus-Rheumaticus-Combined-Bacterin and Streptococcus-Viridans-Combined-Bacterin. 2. Eli Lilly and Company: Catarrhal Vaccine Combined and Influenza Vaccine Combined. 3. H. K. Mulford Company: Influenza Serobacterin Mixed. 4. G. H. Sherman: Sherman's Mixed Vaccine No. 40. (Jour. A. M. A., June 22, 1918, p. 1967).

**Micrococcus Neoformans Vaccine.**—This was admitted to New and Non-Official Remedies in 1910

since at that time it gave some promise of therapeutic value. It has now been omitted because at the present time there is no evidence that the vaccine is of the slightest value and because its lack of value is demonstrated by the fact that during these years it has not made a recognized place for itself in therapeutics. The available information indicates that the micrococcus neoformans does not differ materially from ordinary skin cocci which are described in New and Non-Official Remedies under staphylococcus vaccine. (Reports of the Council on Pharmacy and Chemistry, 1917, p. 152).

**NuTone.**—This "nutritive tonic" is said to have the following complex composition: Cod Liver Oil, Pure Norwegian, 25 per cent., Malt Extract, 9 1/3 per cent., Beef Juice, Glycerine, Hypophosphite Lime, Hypophosphite Soda, Chemically pure, 1 1/2 grs. each to the oz., Fl. Ext. Nux Vomica, 3/64 of a minim in each teaspoonful. It is advertised with claims that will lead thoughtless physicians and a confiding public to depend on it in cases in which fresh air, hygienic surroundings and nutritious food are prime importance. Adults are to take this preparation as a "nutritive" in doses which represent from 3 to 12 grains of sugar and 8 to 30 minims of cod liver oil with unstated, but probably equally small, amounts of beef juice. The Council on Pharmacy and Chemistry declared NuTone inadmissible to New and Non-Official Remedies because it is an irrational, shotgun mixture advertised indirectly to the public with unwarranted therapeutic claims and a non-descriptive therapeutically suggestive name. (Reports of the Council on Pharmacy and Chemistry, 1917, p. 154).

**Uctol.**—This is a paste stated by the R. R. Rogers Chemical Co., San Francisco, Cal., to contain approximately 40 per cent. metallic mercury in a soap base. It is sold as a substitute for mercurial ointment with the claim that it is more efficacious. The Council on Pharmacy and Chemistry declared Uctol inadmissible to New and Non-Official Remedies because the claim for superiority over mercurial ointment is not substantiated and constitutes an unwarranted therapeutic claim; the name does not indicate the composition of this pharmaceutical mixture and because the circular wrapped with the trade package advertises proprietary preparations not accepted by the Council. (Reports of the Council on Pharmacy and Chemistry, 1917, p. 162).

**V-E-M Products.**—The Schoonmaker Laboratories, Inc., New York, market V-E-M Unguentum Eucalyptol Compound, V-E-M with Ichthyol, V-E-M with Stearate of Zinc, V-E-M with Camphor, V-E-M with Boric Acid. The Council on Pharmacy and Chemistry declared these preparations in conflict with its rules because unwarranted therapeutic claims were made for them; because the public was advised to depend on them in the treatment of diseases and because these combinations of ingredients in fixed proportions under proprietary names are irrational. (Reports of the Council on Pharmacy and Chemistry, 1917, p. 163).

## REPORTS AND ANNOUNCEMENTS OF SOCIETIES

### THE WABASHA COUNTY MEDICAL SOCIETY.

The 50th annual meeting of the Wabasha County Medical Society was held in Lake City on Thursday, July 11. The society convened at the City Hall at 11 A. M., with the following physicians in attendance: Dr. Thomas McDavitt, St. Paul, Secretary of the State Medical Association; Dr. J. H. Simons, of Minneapolis; Drs. M. J. Shaughnessy, D. S. Fleischhauer, and L. E. Sutton, of Wabasha; Drs. Cremer and Claydon, of Red Wing; Dr. E. A. French, of Plainview; Dr. A. A. Rankin, of Zumbro Falls, and Dr. R. C. Radabaugh, of Mazeppa, in addition to the local physicians.

In the absence of the president, Lieut. W. F. Bleifuss of Elgin, who is absent in military service, Dr. E. H. Bayley was chosen president pro tem. The usual routine of business was transacted. The following officers were elected for the ensuing year: Dr. E. H. Bayley, President; Dr. J. A. Slocumb, Vice President; Dr. W. F. Wilson, Secretary-Treasurer; Dr. M. J. Shaughnessy, Delegate to State Association; Dr. W. J. Cochrane, Censor for 3 years.

On invitation of Dr. Radabaugh, the society voted to meet next July at Mazeppa; and the matter of arranging for a joint meeting to be held with the Goodhue County Society in October of this year, was left to the Secretary.

Letters were read from members of the society who are in military service, viz.: Major W. B. Heagerty, who is now thought to be in Europe, and Lieut. W. F. Bleifuss now at Fort McHenry, Md., who expects to go across before winter.

Under the heading of "Medical Mobilization in this County," Dr. McDavitt of St. Paul made a few remarks stating that it was the desire of the officers of the state and national medical associations to have every physician in the country enrolled at Washington; to be called upon whenever and wherever needed, either in active military duty, as assistant in some military hospital, substitute for some physician who left his practice to enter the medical reserve corps, or to look after the civilian practice in places poorly supplied with doctors; in short, a redistribution of the medical profession to meet present needs. Blanks were distributed for this enrollment.

The Secretary read a "Five Minute Historical Sketch" of the society which follows:

"The Wabasha County Medical Society was organized in 1869. A meeting was held that year in Lake City, and counting that as the first meeting, this would be the 50th annual meeting, although of course, this society will not have completed fifty full years of its life until next year. Copy of the minutes of this first meeting, after organization.

"The Wabasha County Medical Society met at the call of the President and listened to an able address

entitled 'Why Should Doctors Disagree,' by the President, F. H. Milligan. A motion to print the address was unanimously carried. On motion Dr. S. Willey of St. Paul, Dr. G. R. Patton of Cincinnati, Ohio, and Dr. S. H. Garrard of Frontenac were elected honorary members of the society.

"Drs. Waste and Teft of Plainview, were elected as active members when they shall have signed the constitution and paid their membership fee.

"Dr. Milligan was appointed as a committee with discretionary power to confer with the County Board.

"Drs. Murray of Lake City, Wells of Wabasha and Teft of Plainview were elected delegates to State Medical Society, which meets in St. Paul, February 2, 1870. Adjourned."

In those early days, membership was not limited to the profession of Wabasha county, but included doctors in Wisconsin (Dr. Axtell of Pepin was an early member), and such men as the Mayos, Dr. Staples of Winona, Dr. Hewitt of Red Wing, Dr. McDavitt of St. Paul, and others.

During that period, Drs. Milligan and Lincoln of Wabasha, Adams and Patton of Lake City, Teft and Waste of Plainview, and Adams of Elgin were among the leading spirits in this organization, and I doubt not the influence of the society was felt in the medical councils of the state. Many papers have been contributed to medical journals by members of this society. The records all along show that this society counselled and upheld a high standard of medical ethics.

In 1903 at Elgin, we reorganized to affiliate with the State Medical Association, adopted the constitution outlined for component societies, and received a charter from the State Association. This action automatically limited our active membership to practitioners in the county.

On March 10, 1906, this society tendered a banquet to Dr. J. C. Adams of Lake City on his 75th birthday, and he was presented with a gold-headed cane from his medical friends.

In 1910 at Millville, the first steps were taken by this society toward securing a tuberculosis sanitarium for this county, which culminated in the establishment of the Buena Vista Sanatorium at Wabasha.

Early in its history, the society adopted a county fee bill, but it long ago became obsolete, and so far as I know, all copies have been lost; and it was not until last year that an up-to-date fee schedule was adopted, and under present conditions, it looks as if this one should soon become as obsolete as the other.

On May 19, 1917, there was a special meeting held in Lake City, which probably will prove to be the most notable of all, a meeting for the purpose of encouraging the eligible members to enlist in the Medical Reserve Corps. Four of our members enlisted in the service, and it is probable that more of our number will soon offer their services. Before we meet next year, we may have names adorning our country's hero page, and it is not unlikely, we may be sadly touched by the casualty list."

The society then adjourned to the hospital where an appropriate and tasteful dinner was served by the Superintendent, Miss E. M. LaVerney, assisted by the corps of nurses. After dinner the scientific programme was taken up as follows:

"The Etiology of Genital Prolapse," Dr. J. H. Simons, Minneapolis.

"Observations this Summer at the Boston Clinics," Dr. M. J. Shaughnessy, Wabasha.

"Circumcision, Male and Female," Dr. G. Schmidt, Lake City.

"Regimental Infirmary in Depot Brigade," Dr. D. S. Fleischhauer, Wabasha.

A vote of thanks was heartily tendered to all those who had a part in these exercises, and entertainment of the society; especially to the members belonging to the medical Reserve Corps who afforded the society their interesting letters; to Dr. J. H. Simons of the medical faculty of the University of Minnesota, for his able address, and to Miss LaVerney and assistants for providing so agreeably for the social session. After which the meeting adjourned.

W. F. WILSON, Secretary.

#### SIoux VALLEY MEDICAL ASSOCIATION.

The Twenty-Third Annual Session of the Sioux Valley Medical Association was held at Sioux Falls, S. D., Wednesday, July 24, 1918. The scientific program was as follows: "Hay Fever and Asthma," Dr. J. G. Parsons, Sioux Falls, S. D. "The Artificial Anus as a Life Saver," Dr. F. S. Hough, Sibley, Iowa. "A Few Facts in Regard to Modern X-Ray Therapy," Dr. R. F. Bellaire, Sioux City, Iowa. "Treatment of Syphilis," Dr. E. W. Meis, Sioux City, Iowa. "John Smith," Dr. C. E. McCauley, Aberdeen, S. D. "Observations from Two Hundred and Fifty Autopsies at Camp Dodge, Iowa," Major Daniel J. Glomset, Camp Dodge, Iowa. "Shall Operation for Hypertrophy of the Prostate Be Done in Two Stages?" Dr. Franklin R. Wright, Minneapolis, Minn. "Some Practical Considerations in Diagnosis of Diseases of the Skin," Dr. J. F. Auner, Des Moines, Iowa. "Some Aspects of Anaphylaxis," Dr. Evan S. Evans, Grinnell, Iowa.

## CORRESPONDENCE

### THE NEED OF INSTRUMENTS IN FRANCE AND BELGIUM.

Duluth, Minn., July 17, 1918.

To the Secretary of the State Association,

St. Paul, Minn.

Dear Doctor McDavitt:

I enclose an abridged copy of a letter received some time ago from Dr. Keen; it needs no explanation. I have been slowly collecting some odds and ends in the instrument line for Dr. Keen's collection. If by the end of August the exhibit has become

worthy enough, possibly I may feature it at the State meeting with the sanction of the St. Louis County Medical Society. It has occurred to me that when the State meeting programs are sent out a small separate slip might be enclosed which would call attention to the matter, and give the visiting members an opportunity to slip three or four knives and artery forceps in their pockets when they start for Duluth. It would please Dr. Keen and certainly be a start toward helping out our needy colleagues in France and Belgium. Most of us are willing, but have only a few things to spare, so that it hardly seems worth while to send on only a very few instruments. Here, however, is an opportunity to drop a few instruments in a box which we shall send by freight.

Very truly yours,

J. M. Robinson.

### PROCAINE AND NOVOCAINE IDENTICAL.

To the Editor:

It appears that in certain quarters the attitude is taken that the local anesthetic sold as Procaine is not identical with that marketed as Novocaine. The Subcommittee on Synthetic Drugs of the National Research Council believes it important that this misunderstanding should be corrected and hence offers the following explanation:

The monohydrochloride of para-amino-benzoyldiethyl-amino-ethanol, which was formerly made in Germany by the Farbwerke vorm. Meister, Lucius and Bruening, Hoechst A. M., and sold under the trademarked name Novocaine, is now manufactured in the United States. Under the provisions of the Trading with the Enemy Act, the Federal Trade Commission has taken over the patent that gave monopoly for the manufacture and sale of the local anesthetic to the German corporation, and has issued licenses to American concerns for the manufacture of the product. This license makes it a condition that the product first introduced under the proprietary name "Novocaine" shall be called Procaine, and that it shall in every way be the same as the article formerly obtained from Germany. To insure this identity with the German Novocaine, the Federal Trade Commission has submitted the product of each firm licensed to the A. M. A. Chemical Laboratory to establish its chemical identity and purity, and to the Cornell pharmacologist, Dr. R. A. Hatcher, to determine that it was not unduly toxic.

So far, the following firms have been licensed to manufacture and sell Procaine:

The Abbott Laboratories, Ravenwood, Chicago.

Farbwerke-Hoechst Company, New York, N. Y.

Rector Chemical Co., Inc., New York, N. Y.

Calco Chemical Company, Bound Brook, N. J.

Of these, the first three firms are offering their products for sale at this time, and have secured their admission to New and Non-official Remedies as brands of Procaine which comply with the New and Non-official Remedies standards.



While all firms are required to sell their product under the official name "Procaine," the Farbwerke-Hoechst Company is permitted to use the trade designation "Novocaine" in addition, since it holds the right to this designation by virtue of trade-mark registration.

In conclusion: Procaine is identical with the substance first introduced as Novocaine. In the interest of rational nomenclature, the first term should be used in prescriptions and scientific contributions. If it is deemed necessary to designate the product of a particular firm, this may be done by writing Procaine-Abbott, Procaine-Rector, or Procaine-Farbwerke (or Procaine [Novocaine brand]).

Yours truly,

JULIUS STIEGLITZ, Chairman,  
Subcommittee on Synthetic Drugs,  
National Research Council.

## PROGRESS IN MEDICINE AND SURGERY

**SPINA BIFIDA OCCULTA:** Brickner (Amer. Jour. Med. Sci., Vol. CLV, No. IV) reports a series of cases of spina bifida with five cases operated. He divides spina bifida occulta into four clinical groups:

- (1) With external signs, with symptoms;
- (2) With external signs, without symptoms;
- (3) Without external signs, with symptoms;
- (4) Without external signs, without symptoms.

Externally, this condition may manifest itself by a distinct hypertrichosis over the cleft, less often by a congenital lipoma, by a nevus, telangiectasia or a scar. It is usually located in the lumbosacral region but may often occur even in the dorsal and cervical regions. The congenital lipoma associated with spina bifida occulta is not freely movable, somewhat attached to the underlying aponeurosis, and usually circular in outline. It is not encapsulated and finely lobulated. The clinical symptoms usually appear during adolescence and they may develop during childhood, but can remain absent till middle life. The commonest are urinary incontinence, sensory or motor paralysis, reflex changes, trophic ulcers and gangrene. Roentgenograms should be taken in every suspected case. The presence of a lipoma often prevents definite findings on palpation.

Although the surgical results have not been brilliant, Brickner believes that every case with symptoms should be operated with the hope of improving the condition or at least preventing further progress. Those cases in which there is a hernia of the spinal roots probably offer the best chance for a good result. The reduction of the hernia will relieve the contained nerve roots of traction and pressure.

E. M. HAMMES.

**ACUTE LOBAR PNEUMONIA:** F. C. Shattuck and C. H. Lawrence (The Boston Med. and Surg. Jour., Vol. CLXXVIII, No. 8) report that in the four thousand odd cases of lobar pneumonia treated at the Massachusetts General Hospital, from 1822 to 1917 (inclusive), the mortality has gradually increased from 10 per cent in the first decade to 28 per cent at the present time.

Since 1881 there has been no significant change in the death rate.

The number of cases classed as delicate or intemperate has been decreasing during the same period.

The apparent increase in complicated cases is probably due to increased accuracy of diagnosis and recording.

The relative number of foreign-born patients is increasing, the mortality among them diminishing.

The death rate among American-born patients has increased slightly, as has the mortality among men as compared to women. This may be due to a corresponding increase in vascular diseases during the period studied.

The mortality rate for pneumonia in the entire series has shown no permanent important change.

Treatment has done nothing toward diminishing the mortality from pneumonia in the past ninety-five years. Bleeding, purging, fresh air—the result has been the same. Of particular interest is the evidence offered upon the effect of alcohol. Its habitual use, during health, in more than moderate amounts, is shown to diminish the patient's chances of recovery. But the mortality rate among those patients who were given large amounts of alcohol during their illness, is no higher than among those given no alcohol and large amounts of fresh air. The writers' figures do not indicate that alcohol is harmful to those sick with pneumonia. They suggest that the effect of the drug varies with the conditions under which it is given, and that it is not poisonous to those who have high temperatures and are taking insufficient nourishment.

No change is to be expected in the results of treatment until a specific is discovered which will neutralize the toxins of the pneumococcus.

The results from the serum now in use are encouraging but limited, and until its use becomes accepted, the treatment of pneumonia must be that best suited to the individual. No routine treatment has been justified by its results.

E. T. F. RICHARDS.

**SUTURELESS SKIN SLIDING METHOD FOR THE RADICAL TREATMENT OF LUNG ABSCESS AND CHRONIC OSTEOMYELITIS:** Emil G. Beck (Surg., Gyn. and Obs., Vol. XXVI, No. 3) considers the treatment of chronic suppurations of bones and joints and the chest cavity. The suggestions in this article are based on an experience gained in treating several thousand cases of chronic suppuration. Beck believes this treatment would be very effective in war injuries. Nearly all of the war wounds are

infected from the very moment the missile penetrates the tissues. Guillot and Woimant, who recently published their experiences with infected fractures in the French base hospitals, state that probably 50 per cent. of all fractures of the thigh still suppurate after ten months' treatment.

The author divides the subject into two parts: 1. The treatment of chronic empyema and lung abscess after prolonged suppuration. 2. The treatment of chronic suppuration resulting from bone infection.

In order to arrive at a rational and consistent treatment of chronic suppuration of the lungs and pleura, we must first ascertain in each case the etiology and pathology. The diagnosis of empyema is a rather simple matter. It must be differentiated principally from a serous effusion and from a lung abscess. Quite different and difficult is the diagnosis of lung abscess. A patient may be ill for weeks or months, carrying an abscess in his lung without its detection by the most painstaking search of the ablest diagnostician. Even repeated puncture may fail to reveal its presence.

Beck regards the stereoroentgenogram of the entire chest as the most helpful aid in the diagnosis of lung abscess. When the lung abscess once ruptures into a bronchus the diagnosis is as a rule easy.

Some lung abscesses do not have any odor but the patient will give a history of spitting up a cupful of matter. In these cases it is hard to localize the abscess, as the abscess sac is collapsed and it never fills sufficiently to give a distinct shadow in the roentgenogram or a large enough area of dullness to make out by percussion.

In treating empyema, the author emphasizes the fact that drainage should be established as low as possible and preferably posterior. When there is no tendency to spontaneous closure the problem becomes a very difficult one.

Before attempting operative measures, Beck advocates the use of bismuth paste and points out that repeated injections during several months are often necessary. When the discharge continues to be purulent, more radical surgical procedure should be considered. Beck feels that a cavity holding more than 200 grams is less likely to heal by bismuth injections. During the past 7 years Beck has employed a surgical procedure in these cases, which is far less dangerous and he thinks more effective than the Estlander or similar operations.

Before making the incision, a catheter is introduced into the existing sinus and kept there as a guide during the first part of the operation. The skin incision varies according to the location of the abscess or empyema. He uses a Y-shape, X-shape and trap-door incision. These incisions furnish one or more flaps of skin of various lengths which are intended for implantation into the lung abscess after it has been exposed. After exposing the abscess, the cavity is swabbed with dry gauze, or a mild curettage is done for the purpose of producing a favorable condition for the adhesion of the skin flap. The tips of the skin flaps are drawn into the very deep-

est recesses by means of forceps. Gauze is packed tightly against them. No sutures are used. When bronchi communicate with the cavity, the actual cautery is used to destroy the mucous membrane and thus insure complete obliteration of the opening.

The gauze pack is removed in 48 hours and care must be used that the flaps will not be dislodged during this process. No irrigation or medication is necessary, merely careful packing. The reduction of the size of the cavity is not due to filling of granulation tissue but to the expansion of the underlying lung.

The author has had good results in treating chronic suppurative osteomyelitis in 35 cases during the past 5 years. In these cases he advocates the use of the bismuth paste in order to save the patient an operation if possible. Sequestra must not be allowed to remain in bone cavities, otherwise the bismuth treatment will not be effective. The injection of bismuth paste in these cases is most essential in the diagnosis. Beck condemns the probe. Curettage of bony cavities without ocular inspection is inefficient. In operating upon these cases, the diseased bone is thoroughly curetted or chiseled away. Thus one has a deep groove, and this must be converted into a very shallow one or even into a flat surface by cutting away a sufficient quantity of healthy bone on either side sufficiently large to cover almost the entire denuded bone surface, care being taken, however, that no subcutaneous fat is carried with it. The flaps are then shifted into the depth of the cavity and retained there by packing gauze against them.

It is not necessary that every part of the bone cavity be covered as the skin will grow from the edges of the flaps until every portion of the raw bone surface is covered with true skin.

This method of skin sliding was used in osteomyelitis of the femur, tibia, in hip joint disease, in knee joint disease, in the removal of the os calcis and of the metacarpal bones, in osteomyelitis of the ribs and sternum and in other cases, including infected fractures and other injuries.

E. M. JONES.

**FIVE YEARS EXPERIENCE WITH IRIDOTASIS:** David Harrower (Arch. of Ophthalmology, Vol. XLVII, No. 1) reports his results in a series of twenty-three cases both for the relief of pain and improvement of vision in eyes where vision was still manifest in chronic glaucoma.

The author followed closely the technic which Borthen described in 1911 for the operation of iridotaxis in lieu of trephining and the other operations for the relief of glaucoma: namely, one drop of a 1 per cent. solution of atropin is instilled fifteen minutes before operation, followed by 4 per cent. solution of cocaine every few minutes for ten minutes before operation; the conjunctiva is grasped 10 mm. from the limbus and an incision 10-12 mm. is made parallel with the

corneal line. The whole conjunctival tissue should be included down to the sclera-corneal junction, care being taken not to button-hole. If conjunctiva is punctured a new field should be selected. With the eye fixed, the patient looks down and an incision 4 mm. wide is made behind the corneal margin. With forceps the pupillary margin of the iris is withdrawn into the opening in the sclera. The conjunctiva is smoothed and the operation is completed.

It is imperative that the conjunctival tissue be included down to the sclera, and according to Borthen, the iris should be stretched, as the traction on the iris draws the pupil from the centre and the increased drawing through Fontanna's spaces plays the important role.

Harrower believes the importance is in a properly protected infiltration bleb formed with the largest amount of conjunctival tissue.

In cases reported, by the operation the tension has fallen as low as 10 mm. and the vision greatly improved.

**Reviewer's Note.**—As in Elliot's trephine operation for glaucoma late infections have occurred, so, too, reports are now recorded of late infections following iridotomy due to the formation of an insufficiently firm cicatrix and too large an incision made at the sclera-corneal margin with an insufficient amount of iris withdrawn to close the opening.

GEORGE C. DITTMAN.

**DEEP PALMAR HAND INFECTIONS:** Howard L. Beye (Ann. of Surg., Vol. LXVII, No. 20) believes infection deep in the hand may be localized in one or more definite anatomical positions by, first, the local areas of tenderness; second, the pain elicited by passive movements of the fingers and hand; third, the history or presence of a wound which is probably the initial source of the infection.

Tenderness will vary greatly, depending upon the acuteness of the infection—usually being very marked in the rapidly spreading virulent types, and may be insignificant in those produced by organisms of low grade virulence.

Characteristic is the position in which an infected hand is carried. It is with the fingers and thumb partially flexed at all the joints, and with the hand partially flexed at the wrist. This allows of the greatest relaxation of the muscles, and the least amount of tension between the tendons and their sheaths.

Increase of the partial flexion of the fingers will cause some pain, but extension is the movement which elicits the greatest amount, because it puts all the structures of the palm under tension. Each finger and the thumb must be examined separately, methodically, and, if necessary, repeatedly, in order to determine accurately the relation of movements of the digits to pain.

Edema is usually limited to the back of the hand and is often so marked that the outlines of the knuckles are lost. Redness of this area is also pres-

ent, and these two evidences of local inflammation are responsible for numberless incisions on the dorsum of the hand in cases in which not a drop of pus is present except in the palm. In marked contrast to the edema and redness of the back of the hand is the relative absence of tenderness over this area.

If there is a doubt in the mind of the surgeon as to whether infection is present in a certain space, it is safer to explore that space than to wait to see what is going to happen. Especially is this true if one is dealing with an acute infection. If an exploration is made of a space in the hand, and no pus is found, the chance for carrying infection into the space by the operative procedure is relatively slight. If a space is watched for several hours, and it already contains pus, considerable damage may be done during the delay.

A general anesthetic should be given in the vast majority of cases, because complete relaxation is essential to careful work, and ether is by all odds the anesthetic of choice. Nitrous oxide and oxygen may be given satisfactorily by a skillful anesthetist.

A constrictor should be used unless there is a contra-indication to its use. It allows of careful scrutiny of the blood-free tissues and the detection of small amounts of pus which might be easily overlooked. Its use is contra-indicated if there is a lymphangitis which extends up as high as the elbow or above. The most common complication attributable to its use is a thrombophlebitis of the superficial veins of the forearm.

**After Treatment:** Hot, moist dressings are usually discontinued after forty-eight hours and are replaced by plain gauze dressings spread thinly with sterile vaseline to prevent injury of the granulations. In applying the bandage to the dressing the unincised digits should be left free so as to allow active and passive movement of them, as well as giving the patient more comfort. The drainage material is removed also at the end of forty-eight hours, for if the incisions have been ample there will be sufficient drainage through them from now on. Particularly in the infections of the radial and ulnar bursae it is desirous to remove the drains just as soon as possible, so as to obviate any danger of injury to the synovial lining of the tendons by pressure from the drains.

Beginning on the third day, the hand is soaked every day for fifteen minutes in a hot bath to which is added tincture of iodine. At first just enough of the latter is added to color the water, and each day more is added so as to make the soaking more stimulating to the granulating areas. As early as the third day, while the hand is soaking in the hot iodine solution, passive motion of the fingers is very gently begun and the patient is encouraged to attempt active motion. This is continued each day, more and more force being used, but always being careful not to do more harm than good by excessive injury to the granulation tissue. In infection of the ulnar and radial bursae, early mobility of the second, third and fourth fingers must be worked for, for the fingers are

often annoyingly stiff, due to long continued immobilization as well as the inflammation of the bursae.

It should be emphasized that an infected hand which has been drained should be examined carefully each day in order to make sure that all of the infected areas have been opened and that the drainage has been ample. If an infected area has been sufficiently drained, tenderness should no longer be present over that area. If tenderness develops over a space which has not been drained, involvement of that space must be at once suspected. The pulse, temperature and leucocyte count are valuable adjuncts as they are in infection in any part of the body. But in an old, neglected hand infection, pus may be present or may even spread to involve a new area without variation in the pulse, temperature or leucocytes giving a clue.

GEORGE EARL.

**DIATAXIA CEREBRALIS INFANTILIS.** The Ataxic Type of Cerebral Birth Palsy: Hunt (American Journal Medical Sciences, Vol. CLV, No. IV), gives a most interesting discussion of the various types of cerebral palsies. The common clinical type is the spastic form and usually spoken of as Little's Disease. It may involve either one or all extremities and may be associated with ataxia, tremor, athetosis, mental defect or epilepsy. This condition was first described by Little in 1862. Förster in 1909 described a type which he termed the atonic-astatic type. This group is characterized by flaccid motor paralysis associated with difficulty in articulation and a marked mental defect. In 1913 Pierce Clark reported a similar condition and on clinical grounds only believed the lesion to be a combined one involving both the cerebrum and the cerebellum.

Batten described a congenital cerebellar ataxic type with decided tendency toward recovery. There is little or no mental defect and clinically the main symptom is ataxia of the cerebellar type.

Hunt, in this article, calls attention to the ataxic type of cerebral origin. There is neither paralysis nor spasticity and the ataxia may be regarded as the sensory equivalent of cerebral diplegia. The vascular lesion is probably situated behind the fissure of Rolando in the sensory sphere of the cortex, thus implicating the centers and commissural systems which are engaged in the reception and transmission of the memories of movement. He reports three cases of this type.

E. M. HAMMES.

**SARCOMATOUS DEGENERATION OF UTERINE FIBROIDS.** Report of two cases: H. W. Mills (Interstate Medical Journal, Vol. XXV, No. 3), states that his reason for writing on this subject was a statement in an article by Dr. S. M. Bones in July, 1917, to the effect that "Sarcoma as a complication of uterine fibroids has been reported, but is so rare that it need

not be given further consideration." Mills states that, like many others, he has been content with a cursory microscopic examination of fibroids removed by hysterectomy and has only submitted to microscopic examination those specimens which, to the naked eye, appeared suspicious.

The fallacy of opinion based on such cursory examination is exemplified by the reports of Winter, who found a percentage of 3.2% only in the former class in a series of 500 cases, but discovered in a further series of 253 cases that the proportion rose to 4.3%.

Professor R. Peterson, of the University of Michigan, found 21 cases of sarcoma in an examination of 6,084 cases of pelvic pathology and 18 of these resulted from degeneration of uterine fibroids. He points out that this degeneration may occur:

1. By proliferation of the intermuscular tissue.
2. By proliferation of the connective tissue of the vessel walls.
3. By direct changes in nonstriated muscle cells.

He labors the necessity of early operation and systematic examination of all fibroids.

W. A. Neuman Dorland, 1916, quotes Giles to the effect that sarcomatous degeneration occurs frequently and that the diagnosis cannot be made before operation and gives the following list of authors, with the percentages in which they found this sequela, attached.

W. J. Mayo, 1½%; Miller, 2%; Warnekros, 10%; Bland Sutton, only 1 in 1,000 cases; Pfannenstiel, none in 1,000 cases; Mackenrodt, 4%; Geist, 4.8% in 250 cases; Deaver, 1.2% in 342 cases; Noble, 2%; Martin, Cullingworth, Scharlieb, Haultain, McDonald and Hirst, 2% in 1,714 cases.

Mills reports two cases. One is that of a woman 68 years of age who had a sarcomatous degeneration of a submucous fibroid of the uterus. Death occurred five months after operation from a generalized abdominal sarcomatosis. The second case was a woman 48 years of age, on whom a supravaginal hysterectomy was done February 24th, 1916. Microscopic examination showed a sarcomatous degeneration of a uterine fibroid. On Dec. 7th, 1917, the patient was examined and found to be well and free from evidence of recurrence.

E. M. JONES.

**A STUDY OF ANTE-OPERATIVE AND POST-OPERATIVE BLOOD COUNTS IN NON-INFECTIVE SURGICAL CONDITIONS:** Frank L. Meleney (Annals of Surgery, Vol. LXVII, No. 20) reports on 51 cases studied in the wards of the Presbyterian Hospital. These cases were chosen at random, the only cases not accepted in the series being those in which an acute infection was present before operation or a marked infection expected after it.

In each case the following data were obtained: The age, sex, and type of individual; the character, length and severity of the operation; the degree of trauma of the tissues and the number of foreign bodies introduced; the estimated blood and other



body fluids lost by sweating and vomiting (in some cases also the fluid intake and urinary output); the method and kind of anaesthetic and the length of anaesthesia; and the general condition of the patient as indicated by appearance, respiration and pulse during the anaesthetic. In the post-operative course of the patient, notes were made on the condition of the wound found at dressings. Also the maximum and minimum temperatures for each day were charted as long as the blood counting was continued. Individual charts were made and curves plotted for the total white and red cell counts and the per cent. of polynuclears.

An ante-operative (A. O.) count was made on the afternoon before the morning operation (in a very few cases just before operation). A second count was made on the afternoon of the day of operation, approximately six hours post-operation (P. O.). Another count was made every afternoon following until it returned either to normal or to the initial count. In making averages, those cases which fell to normal before the twelfth day were considered to maintain their final count until that day.

In all of the 51 cases a daily white cell count was made. In 39 a daily differential count was made. In 26 the red cells were counted A. O. and P. O., and on alternate days thereafter.

His conclusions were:

1. In surgical cases undergoing operation without infection, the white cells increase in number, and about six hours after operation have more than doubled.
2. The response is due almost entirely to the outpouring of polymorphonuclear cells.
3. There is a trivial rise in red cells after operation, but in the subsequent ten days this is followed by a progressive anaemia with an average loss of about one-half million cells per c. mm.
4. The white cell count may be expected to fall rapidly in clean cases and reach normal on the fourth day. In infected or contaminated cases it will fall much more slowly.
5. Infection and contamination have nothing to do with the initial rise, but on the second or third day after operation they will tend to keep the count high.
6. Other things being equal, the count will be higher in those cases in which there are severe trauma to the tissues, many sutures and ligatures used, considerable loss of blood and long anaesthesia, especially with ether.
7. Normal individuals will produce a higher leucocytosis than abnormal types.

GEORGE EARL.

**THE NERVOUS SYMPTOMS OF POLYCYTHEMIA VERA:** Henry A. Christian (Am. Jour. Med. Sc., Oct., 1917) thinks it is worth while to emphasize the nervous symptoms presented by these patients, because failure to keep them in mind has led,

in some instances, to cerebral operations with the idea that the symptoms were the result of brain tumor.

Furthermore, he warns that sometimes these patients may be neither abnormally blue nor red, but pale.

The most frequent nervous symptoms are: vertigo, fullness in the head, headache, pain and pricking sensations in the extremities, ringing in the ears, loss of consciousness, thickness of speech, staggering gait, blurring of vision, etc.

He reports ten cases which have come under his personal observation—all but two showed nervous symptoms, and in most cases the nervous disturbances were the chief cause of the patients' symptoms.

Headache and dizziness were the most frequent. Other common symptoms were disturbances of vision, such as easily induced fatigue of the eyes, blurring of vision, scotomata often scintillating, transient blindness, hemianopsia and diplopia, paresthesias and paralyses.

Autopsy findings in a number of these cases showed cerebral thromboses and hemorrhage to account for the symptoms in some cases and areas of cerebral softening with no thrombosis in other cases. Half the cases failed to show color in the skin to suggest the diagnosis and all the cases were over 50 on admission. In the earlier stages such nervous symptoms probably result from simple circulatory disturbances—in the later stages cerebral softening or hemorrhage and local vascular lesions such as thrombosis are found.

Case 4 is interesting enough to include in this abstract. Male age 55; recurring headache for 20 years. For 10 years eye symptoms consisting of fatigue and poor vision, scintillating scotomata and blind spots in field of vision. For 6 years recurring sensations of tingling in left arm and leg, causing wrist drop, and one month before admission sudden complete paralysis left arm—lasting 24 hours. Ten days before admission severe headache and paresthesia left side of body. Left arm became weak and muscles twitched. Three days ago left side of face became weak and complete loss of motion in left arm. Two days ago left leg weak and speech difficult and marked photophobia.

These symptoms, together with the confirmatory neurological findings and the detection of homonymous hemianopsia and edema and hyperemia of the optic disks suggested the probability of brain tumor, in spite of a cyanosis of ears, fingers and mucous membranes and a haemoglobin of 180 per cent. and a red count of 6,960,000. He died following a cerebral decompression. Autopsy findings showed bilateral thrombosis of the cerebral arteries with areas of cortical degeneration in both cerebri; mural thrombosis of the aorta, thrombosis of the coronary arteries, infarcts in the heart and spleen splenomegaly.

C. N. HENSEL.

**CLINICAL OBSERVATIONS ON SO-CALLED LA GRIFFE:** B. M. Randolph (N. Y. Med. Jour., Feb. 17, 1917) discusses an epidemic with the following clinical characteristics: sudden onset, fever, muscular and neuralgic pains, depression, and usually, exudative inflammation of some portion of the respiratory tract. Twenty-two cases were studied by bacteriological control.

In not a single case was the Pfeiffer bacillus, the supposed causative agent of influenza, found; but in every case the streptococcus hemolyticus was demonstrated.

The leucocyte count was relatively low, from 5,000 to 10,000, only two or three cases showing 13,000 and 16,000.

This study is quite interesting for we know the effects of the streptococcus hemolyticus and this may account for the marked prostration and slow recovery from attacks of so-called La Grippe.

C. N. HENSEL.

## BOOK REVIEWS

**ON MODERN METHODS OF TREATING FRACTURES.** (By ERNEST W. HEY GROVES, D. S., M. D., B. Sc. (Lond.), F. R. C. S. (Eng.). Published by William Wood and Company, 1916.)

This little book of 278 pages, containing 136 cuts, is divided into nine chapters, as follows:

- I. Introductory: The Myths of Yesterday and the Problems of Today.
- II. Massage and Mobilization.
- III. Extension by Adhesive Appliances.
- IV. Mechanical Modifications of the Extension Method.
- V. Operative Treatment: Experimental Observations.
- VI. The Operative Treatment of Fractures: General Consideration of Indications and Technique.
- VII. On the Operative Treatment of Special Fractures.
- VIII. Open Fractures.
- IX. On Ununited Fractures.

The introductory chapter, "The Myths of Yesterday and the Problems of Today," calls attention to the marked change in the attitude of the medical profession regarding what may be considered a good result following the treatment of a fracture. The author very tritely considers the relation between Form and Function—"Cases of Good Form with Bad Function," "Cases with Bad Form and Good Function," "Cases with Bad Form and Bad Functions;" "The Kind of Deformity which Leads to Disuse," "The Relation of Age, Occupation, and Lapse of Time to the Importance of Bone Deformity." He calls attention to the nature of the modern problem and the modern methods of solving the problem. These

methods he divides into three classifications: First, Methods of Massage and Mobilization; second, Extension Methods; third, Operation Methods. He also calls attention to the need of co-operation between the different systems.

In chapter two massage and mobilization are considered in detail. The author describes the difference between massage as advocated by Lucas-Championniere and his pupils and the ordinary massage "with all its manifold pressures and kneadings."

Those who have not practiced scientific massage will be surprised to learn that by its use complete relaxation of the muscles in the region of the fractured bone may be obtained and reduction accomplished, without pain to the patient, in a considerable proportion of cases. The author states that in the treatment of a fracture, after reduction has been accomplished, massage and passive motion are of the utmost importance, and that it is no longer permissible securely to bandage a limb, immobilizing the joints in the region of the fracture for any considerable period without the use of this therapeutic measure. Reduction of pain and early return of function are its salient features.

Chapter three deals with Extension by Adhesive Appliances. Advantages as well as difficulties of applying extension are discussed, and the work of Bardenheuer is commended. The necessity of massage, as well as passive motion of the associated joints, is once more insisted upon. The different forms of wire splints of the Thomas variety are warmly advocated in fractures of the femur. Many ingenious mechanical devices are shown.

Chapter four deals with Mechanical Modifications of the Extension Method. The methods of Codivilla and Steinman, with their application, are carefully described. In this chapter a double transfixion method developed by the author is shown. This consists of external extension applied between the ends of two metal pins which transfix the bone fragments at some distance from the point of fracture. This apparatus has given excellent results both experimentally and clinically.

Chapter five takes up Operative Treatment and Experimental Observations. In this chapter the work of MacEwen is verified to some extent, and the Lane plate very distinctly discredited. Briefly, this experimental work shows that the important points which make for success in open treatment of fractures are perfect immobilization and asepsis; that foreign substances are tolerated by the tissues; that the size of a foreign substance is relatively unimportant; that it makes little difference whether the internal splint is used as a plate or a dowel. "Firmness of fixture is the dominant factor which determines most often whether a plate will remain in position or become loose." Nickel-plated steel is recommended as the most satisfactory foreign material. Circular or spiral fixation with wire or a band was found to interfere with the circulation by destroying the periosteum. In the author's experimental work are cases in which the fixation appa-

ratus became loose and suppurated. Small, ill-fitting bone chips should not be used to fill defects between the bone ends. The author's experiments all bear out this contention. Attention is also called to the discussion whether the periosteum produces bone, and the author says this depends largely upon what we consider the periosteum to include, the outer or fibrous layer being a simply limiting membrane, the inner layer containing osteogenetic elements. He also calls attention to the fact that bone will always reproduce new periosteum, adding "If, then, the bone is certainly the mother of the periosteum, it is very unlikely that the periosteum is also the mother of the bone."

Chapter six deals with the Operative Treatment of Fractures, and gives a very comprehensive review of the important points one must consider when deciding between the open and closed treatment. In this regard the author is very conservative, and calls attention to the fact that great haste is unnecessary, giving, therefore, plenty of time in which to try out the closed method. Metal and bone fixation are described, and many clever devices developed by the author are shown. One cannot help but be impressed by the excellent results obtained by the use of foreign material.

Chapter seven considers the Operative Treatment of Special Fractures, and the most satisfactory incisions are outlined. Wire is recommended as the material par excellence in fractures of the patella and olecranon. The author has never been called upon to try a fracture of the clavicle by the open method. For fracture of the neck of the femur extension and abduction treatment are condemned. Senile cases are gotten up early, and in younger people a square bone peg taken from the tibia is driven into a round hole, uniting the neck to the head of the femur. These patients are allowed to place weight upon the limb six weeks after the operation. The open operation is believed to be indicated in the majority of complete fractures of the shaft of the femur in adult life. Fractures into the joints, if accompanied by much displacement, should be operated upon.

In chapter eight open fractures are discussed at some length, and in cases of infection it is recommended to turn the bone ends outward, thus angulating the limb for the purpose of drainage. An excellent wire cradle-leg splint is shown for the purpose of treating and transporting cases injured in war. Transverse incision of the muscles of the leg, dividing, however, only a portion of each muscle, is recommended on account of the opportunity for drainage. In compound injuries into large joints the removal of loose pieces of bone is recommended. The placing of plates or screws in infected fractures is deprecated.

Chapter nine deals with Ununited Fractures. Chief causes of non-union are: (1) Interposition of soft parts; (2) Unrestricted mobility; (3) Eburnation of the bone ends before maturity of the callus; (4) Loss of bone substance.

Under operative treatment, efficient fixation, stimulation of callus production, and bone-grafting are the methods considered. Eburnated ends are treated by freshening and by longitudinal multiple sawcuts or drill holes in the ends of the bone. It is in this class of cases that bone-grafting has its greatest application.

Since reviewing the book of MacEwen upon the Growth of Bone the reviewer has not had the pleasure of reading anything upon the subject which seemed to present so many practical points. Any one who essays to handle this class of cases cannot well afford to be without this work.

ROBERT EMMETT FARR.

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*THE SURGICAL CLINICS OF CHICAGO.* (By various authors. With 80 illustrations. April, 1918. Vol. 2, No. 2. Published Bi-Monthly by W. B. Saunders Company. Philadelphia and London.)

Orthopedic cases predominate in these reports. This specialty with the treatment of head injuries has assumed a new and great importance since the war. Especially interesting is the work of Dr. Dallas B. Phemister on Bone Transplantation for Repair of Defects of the Mandible.

GEORGE EARL.

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*A POCKET FORMULARY.* (By E. QUIN THORNTON, M. D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. Eleventh Edition, Revised. Published by Lea and Febiger, Philadelphia and New York. Price, \$2.00.)

This pocket volume of 292 pages contains an enumeration of diseases arranged alphabetically and under each are given what are believed to be the most efficacious prescriptions for simple cases as well as for various stages and complications.

The reviewer feels that this volume is a good one of its kind. For one who, from lack of time or knowledge, finds it necessary to resort to predigested drug theory this work may serve a useful purpose.

PAUL D. BERRISFORD.

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*IMPOTENCE AND STERILITY WITH ABERRATIONS OF THE SEXUAL FUNCTION AND SEX-GLAND IMPLANTATION.* (By G. FRANK LYDSTON, M. D., D. C. L. Published by the River-ton Press, 25 E. Washington Street, Chicago. 1917. Price, \$4.00.)

The thorough way in which the author presents the subjects described in the title of his book, places it in the front rank as first class reading for the practitioner as well as the specialist. Not a detail is overlooked. The chapter on Sex Gland Implantation, is especially interesting and scientific, not only for its originality, but because it opens up a new field in the line of therapy.

H. N. KLEIN.

*COLLECTIVE PAPERS OF THE MAYO CLINIC, Rochester, Minn.* (Edited by Mrs. M. H. MEL-  
LISH. Published by W. B. Saunders Company,  
Philadelphia and London. 1918.)

This collection of 1917 papers from the Mayo Clinic is even more complete than the papers collected in former years. Like the preceding volumes composed of papers from this Clinic it is full of "meaty" articles on interesting surgical subjects as handled at the Mayo Clinic, together with voluminous references and bibliographies. In addition the book deals with research work at the Mayo Clinic in conjunction with the University of Minnesota.

While the whole volume is well worth reading even by those who have previously read most of the articles in the different journals, special mention should be directed to the article "War's Influence on Medicine," by Col. C. H. Mayo.

After one has read the whole volume he should again turn to the articles by Col. W. J. Mayo, which for pure scientific discussion of surgical conditions, rhetoric and clear presentation cannot be surpassed by any medical writer in the country.

H. J. O'BRIEN.

*THE THIRD GREAT PLAGUE. A Discussion of Syphilis for Everyday People.* (By JOHN H. STOKES, A. B., M. D., Chief of the Section of Dermatology and Syphilology, The Mayo Clinic, Rochester, Minnesota; Assistant Professor of Medicine, The Mayo

Foundation Graduate School of the University of Minnesota. Published by W. B. Saunders Co. 1917. Price, \$1.50.)

This little volume is certainly deserving of the widest circulation. The subject of syphilis is very cleverly handled and presented in such a manner that the layman can easily understand the different phases and dangers of this disease. It serves a great purpose inasmuch as the knowledge gained from reading this book will aid materially in starting a crusade against syphilis. No doubt the author had this in mind.

H. N. KLEIN.

*MEDICAL SERVICE AT THE FRONT.* (By LIEUT.-COL. JOHN McCOMBE, C. A. M. C., and CAPT. A. F. MENZIES, M. C., C. A. M. C. Published by Lea and Febiger, Philadelphia. 1918. Price, \$1.25.)

For those physicians who are anticipating entrance into the Medical Reserve Corps this small book will prove of inestimable value. The subject matter is arranged under the following heads: A Division in the Front Line, The Regimental Medical Officer, The Ambulance, The Field Ambulance in Peace Warfare, The Field Ambulance in Battle, The Selection of Field Ambulance Positions, The Casualty Clearing Station, etc. The work is amply illustrated with diagrams and the text written by men who have been "through the mill."

PAUL D. BERRISFORD

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